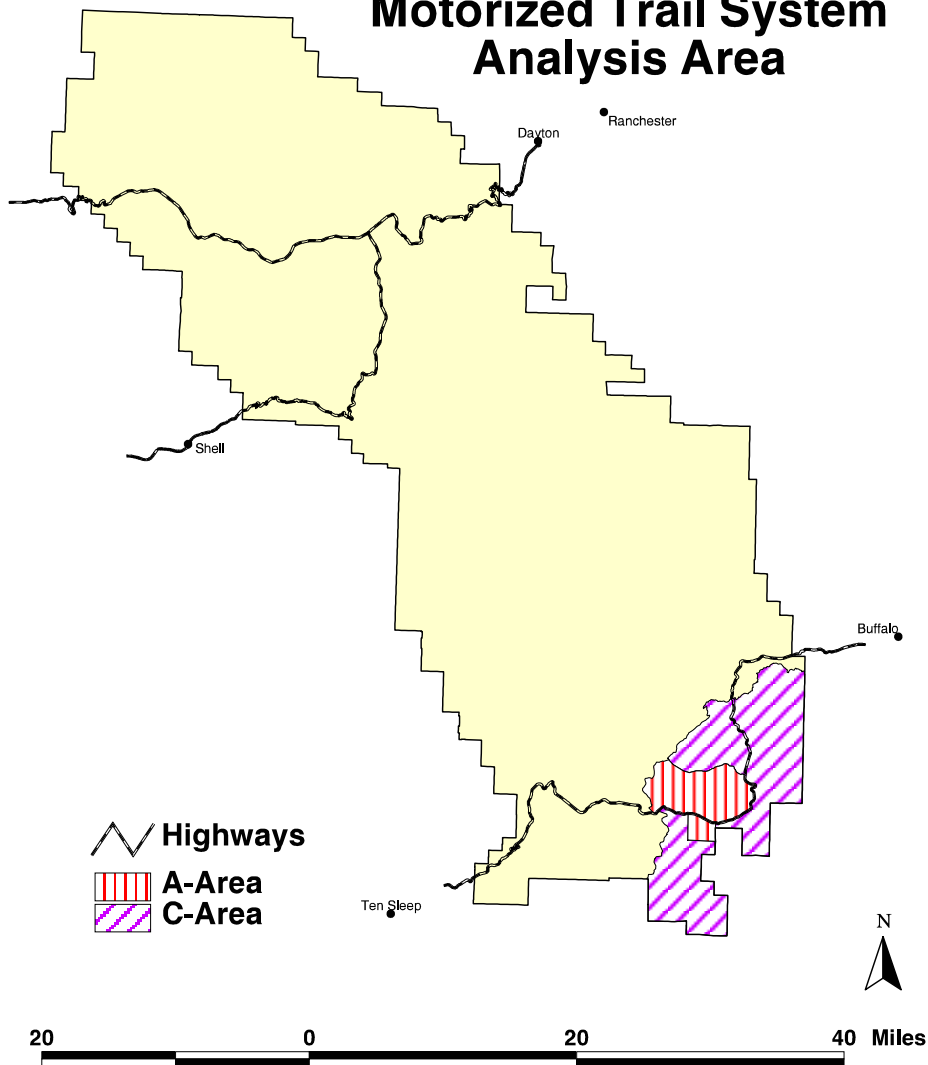


# Clear/Crazy Designated Motorized Trail System Environmental Assessment

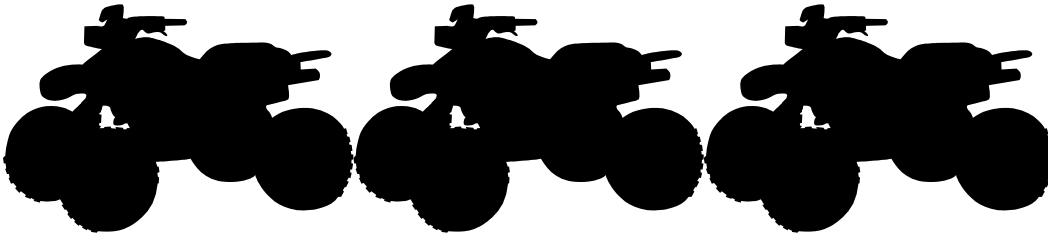
## Clear / Crazy Designated Motorized Trail System Analysis Area



USDA Forest Service, R-2  
Bighorn National Forest  
Powder River Ranger District  
May 2004

## Environmental Assessment

### Clear/Crazy Designated Motorized Trail System



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Comments received in response to this solicitation, including names and addresses of those who comment, will be considered part of the public record on this proposed action and will be available for public inspection. Comments submitted anonymously will be accepted and considered; however, those who submit anonymous comments will not have standing to appeal the subsequent decision under 36 CFR Parts 215 or 217. Additionally, pursuant to 7 CFR 1.27(d), any person may request the agency to withhold a submission from the public record by showing how the Freedom of Information Act (FOIA) permits such confidentiality. Persons requesting such confidentiality should be aware that, under the FOIA, confidentiality may be granted in only very limited circumstances, such as to protect trade secrets. The Forest Service will inform the requester of the agency's decision regarding the request for confidentiality, and where the request is denied, the agency will return the submission and notify the requester that the comments may be resubmitted with or without name and address within 30 days.

# Environmental Assessment

## Clear/Crazy Designated Motorized Trail System

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# Chapter 1

## CHAPTER 1

### PURPOSE AND NEED

#### INTRODUCTION

The Powder River Ranger District of the Bighorn National Forest prepared this environmental assessment (EA) to address the recreation conflicts and resource impacts in the Clear/Crazy Designated Motorized Travel System area. Conflicts result from increased use by both motorized and non-motorized recreation. The document summarizes changes in travel management in the Clear/Crazy Designated Motorized Travel System area that have taken place during the last several years. It also assesses the environmental effects of motorized travel management. The results of this assessment will be presented in a Decision Notice issued after response is completed to public comments on this EA. The planning file is located at the Powder River Ranger District in Buffalo, WY.

Decisions to be made based on this analysis include:

1. Which roads and trails will remain open for motorized vehicle use?
2. Are seasonal closures to motorized vehicles necessary for resource protection?
3. Should trails be identified for non-motorized use, and if so, which ones?
4. Will motorized travel be restricted to designated roads and trails?
5. What changes are necessary to protect roads and trails that are negatively impacting waterways or other resources?

The results of this EA will be the selection and implementation of one of the alternatives. This environmental analysis incorporates information received during public scoping meetings.

#### LOCATION

The analysis area is located in the southeastern portion of the Bighorn National Forest in Johnson County and is approximately 88,000 acres as shown on Map 1. The analysis area does not include any acres in the Cloud Peak Wilderness which borders the northwest boundary of the analysis area. It does include both areas open to cross-country travel and areas closed to cross-country motorized travel. The closed area is within the 1998 Caribou Timber Sale decision where motorized travel was restricted to roads and trails.

#### FOREST PLAN DIRECTION

The Bighorn National Forest Land and Resource Management Plan (Forest Plan) was approved in 1985. It provides the long-term direction for managing the Forest. In the Forest Plan, National Forest System lands are categorized into management area prescriptions. The following management area prescriptions are found within the analysis area and displayed on the map titled "Management Areas" located at the end of this chapter.

- 2A - Semi-Primitive Motorized (SPM) Recreation: Emphasis is on semi-primitive recreation of a motorized nature, including such activities as snowmobiling, four-wheel driving and motorcycling both on and off roads and trails. Motorized travel may be restricted or seasonally prohibited to designated routes to protect physical and biological resources.

- 2B - Rural/Roaded Natural (RN) Recreation - Emphasis is on associated rural and RN recreation opportunities. The opportunities include both motorized and non-motorized recreation activities, such as driving for pleasure, viewing scenery, picnicking, fishing, snowmobiling and cross-country skiing. Conventional use of highway type vehicles is provided. Motorized travel may be prohibited or restricted to designated routes to protect physical and biological resources.
- 3A - Semi-Primitive Non-motorized (SPNM) Recreation in roaded or non-roaded areas - Emphasis is on semi-primitive recreation of a non-motorized nature in both roaded and non-roaded areas. Recreation opportunities for activities such as hiking, horseback riding, hunting and cross-country skiing are available. Seasonal or permanent restrictions on human use may be applied to provide seclusion for wildlife.
- 4B - Emphasis on Habitat for Management Indicator Species (MIS): Emphasis is on the habitat needs of one or more MIS Species with compatible habitat needs for the area. Goal is to optimize habitat capability and number of species. Vegetation characteristics and human activities are managed to provide optimum habitat for selected species. Local roads and trails are either open or closed to public motorized travel. Semi-primitive motorized recreation opportunities are provided on those local roads and trails that remain open, semi-primitive non-motorized opportunities are provided on those that are closed.
- 4D - Aspen Management: Emphasis is on maintaining and improving aspen sites. Recreational opportunities available are those which are compatible with the SPNM, SPM or RN recreation. Some temporary or seasonal road and area use restrictions are implemented to prevent wildlife disturbance.
- 6A – Livestock Forage Improvement: Emphasis is on improving soil and vegetation conditions to satisfactory condition. Rangeland vegetation is improved through forage improvement, livestock management and regulation of resource activities. Dispersed recreation opportunities vary between SPNM and RN classes.
- 6B - Livestock Grazing: Emphasis is on improving and/or maintaining rangeland conditions. Intensive grazing systems are favored over extensive systems. Dispersed recreation opportunities vary between SPNM and RN.
- 7E – Wood Fiber Production and Utilization: Emphasis is on wood fiber production. RN-compatible recreation opportunities are provided along Forest arterial and collector roads. SPM recreation opportunities are provided on those local roads and trails that remain open. SPNM opportunities are provided on those that are closed.
- 9A - Riparian Area Management: Emphasis is on the management of all of the component ecosystems of riparian areas. Vehicular travel is limited on roads and trails during times when the ecosystems would be unacceptably damaged.

At this time, the Forest is conducting a Forest plan revision process which will result in changes both to the names and characteristics of the management area prescriptions themselves as well as to how they are allotted across the Bighorn National Forest.

## REGIONAL GUIDE DIRECTION

The Regional Guide serves as a framework for decisions regarding management of the National Forests in the Rocky Mountain Region. With regard to travel management-related decisions, the 1992 Rocky Mountain Regional Guide states:

“On all land area outside of developed travel ways, motorized use with wheeled vehicles will be restricted unless such use is specifically allowed and so designated. Over-snow vehicle travel will be allowed unless specifically restricted.

On all developed travel-ways, motorized use with wheeled vehicles will be allowed unless such use is specifically restricted and so designated.”

#### PURPOSE AND NEED FOR THE ACTION

The purpose of the EA for the Clear/Crazy Designated Motorized Travel System area is to identify an array of travel management options that will best provide access for motorized and non-motorized recreation users, provide a variety of recreation opportunities and support resource management (e.g. wildlife, livestock grazing) while protecting the environment.

The use of motorized vehicles in the Clear/Crazy Designated Motorized Travel System area has steadily increased through the years and is anticipated to continue to increase in the years ahead with the states new ORV registration efforts. Noticeable changes in the popularity and capabilities of ORVs have occurred since the 1985 Forest Plan. For example, in 1985, the off-road vehicle was a new recreational vehicle. Growth in ORV numbers is estimated to be growing each year. Nationally from 1995 to 2001 the sales of ORVs has grown from 250,000 per year to over 750,000 per year. This is a 3-fold increase in just 7 years. No other area of recreational use is growing near this rate. In the first full year of Wyoming State ORV required registration, sales totaled 30,000 stickers.

Use of ORVs as a recreational vehicle boomed in the late 1980's, both during the summer season for trail rides and fishing access, and in the fall for hunting access. Along with the increasing numbers of ORVs, the physical characteristics of the ORV have changed over the decade. They have changed from the original, relatively unstable fat-tired three-wheeler less than 40 inches wide, to much more stable four-wheel drive four-wheelers that are 48 inches wide with larger displacement engines. Motorcycle use has also increased both for enduro and motocross rides, although it has not seen the same level of dramatic growth as ORV use Forest-wide.

Along with an increase in popularity of ORVs on the Forest, there has also been an increase in the number of hikers, horse riders and bicyclists. This contributes to a higher probability of encountering other users on the same trail at the same time. When the number and diversity (e.g. motorized and non-motorized uses) of trail encounters becomes excessive, it can result in social conflicts between users and an unsatisfying recreation experience.

The 1998 Bighorn National Forest Visitor Map shows that off-road/trail motorized travel in a portion of the Clear/Crazy Designated Motorized Travel System area is allowed provided resource damage does not occur. Concerns have been expressed by both the public and Forest managers about impacts to vegetation, riparian areas and streams, the loss of solitude at backcountry fishing spots, and new non-system routes being created and reinforced by repeated use and unauthorized maintenance by the public.

A goal of the Forest is to provide an array of opportunities for the various recreation user groups. There is also a need to manage recreation use and resources to protect water quality, soils, vegetation, wildlife, fisheries and other environmental elements. The creation of new routes from repeated off-road and off-trail use has caused resource damage and trail braiding in numerous areas within the analysis area.

A determination was made that an environmental analysis was needed involving broad public participation. Implementation of a travel plan that both addresses resource concerns and the needs of forest users will help insure future cooperation by the public as well as provide a necessary level of

resource protection. Other critical needs are improved signage, maps, information and education initiatives to assist in travel management compliance through user cooperation and understanding.

## ISSUES IDENTIFIED

Public involvement for Clear/Crazy Designated Motorized Travel System area began in 2002 with several meetings with interested non-motorized and motorized users and public officials. On February 22, 2003 the district held a public meeting to listen to concerns if motorized travel were restricted to authorized roads and trails and to share with the public issues with resource impacts of allowing the cross-country motorized travel to continue. A follow-up meeting was held March 15, 2003 to receive the information from the public. During the fall of 2002, a trail inventory was conducted for the analysis area.

During the public involvement process, organizations and individuals were contacted including natural resource interest groups, livestock grazing permittees, timber industry organizations, adjacent landowners, and numerous individuals and groups that have expressed interest in resource management on the Powder River Ranger District. Other governmental agencies contacted include Wyoming Game and Fish Department, State Historical Preservation Office, federal and state legislators, Sheridan and Johnson County Commissioners and Sheriff's Departments, and other local officials. In addition, the general public in the area was made aware of the public involvement process through legal notices posted in the Sheridan Press, Casper Star Tribune and the Buffalo Bulletin newspapers. The legal notice in the Sheridan Press, the newspaper of record at the time of formal scoping, was published on November 17, 2003. On December 3, 2003 an open house was held at the Powder River Ranger District's office to answer any questions the public may have about the proposed action. Twenty seven individuals signed in at the open house and their comments were included in the scoping record.

Of particular note were of the comments received during scoping, dealing with the Inventoried Roadless areas within the analysis area. The Wyoming Wilderness Act of 1984 released roadless areas on the Bighorn National Forest for multiple uses. Additionally under the Roadless Area Conservation Rule, roadless areas could contain motorized trails and still retain their eligibility as roadless. The Roadless Rule, codified at 36 CFR 294 Subpart B (2001) prohibited new road construction and timber harvest in inventoried roadless areas.

Litigation concerning the roadless rule began shortly after publication. The most recent judicial decision (July 13, 2003) was issued by Judge Brimmer, United States Federal District Court, Wyoming. It permanently enjoins the implementation of the Roadless Rule nationwide. As of the date of writing, March 26, 2004, no direction has been issued by the Forest Service for special management of inventoried roadless areas identified in the Roadless Area Conservation FEIS. If the rule goes into effect and is implemented at some future time, its prohibitions will apply within the boundaries of the inventoried roadless areas published in the Forest Service Roadless Area, Final Environmental Impact Statement, Volume 3, dated November 2000, which are held at the national headquarters office of the Forest Service, or any subsequent update or revision of those maps. Alternatives developed in Chapter Two meet these requirements.

During the analysis process, consultations were also held with resource management specialists, user groups and interested individuals to refine information about the current road system and use patterns.

From these public involvement efforts, issues were identified related to travel management and were considered in the environmental analysis. Issues were grouped into categories as follows:

1. Wildlife – need for security areas and protection of calving areas for elk, road density, and stream crossing density.
2. Watershed/Riparian/Wetlands – sedimentation into live streams from unauthorized user created ORV routes and poorly located Forest Roads.
3. Soils – Erosion caused by poorly located or user created routes.
4. Vegetation/Invasive Species – User-created routes provide pathways for the introduction of weeds into areas previously free of them.
5. Recreation – balanced opportunities for motorized and non-motorized users.
6. Heritage resources – compliance with the law and protection of sites.
7. Livestock management – effects of summer cross-country motorized travel on livestock distribution.

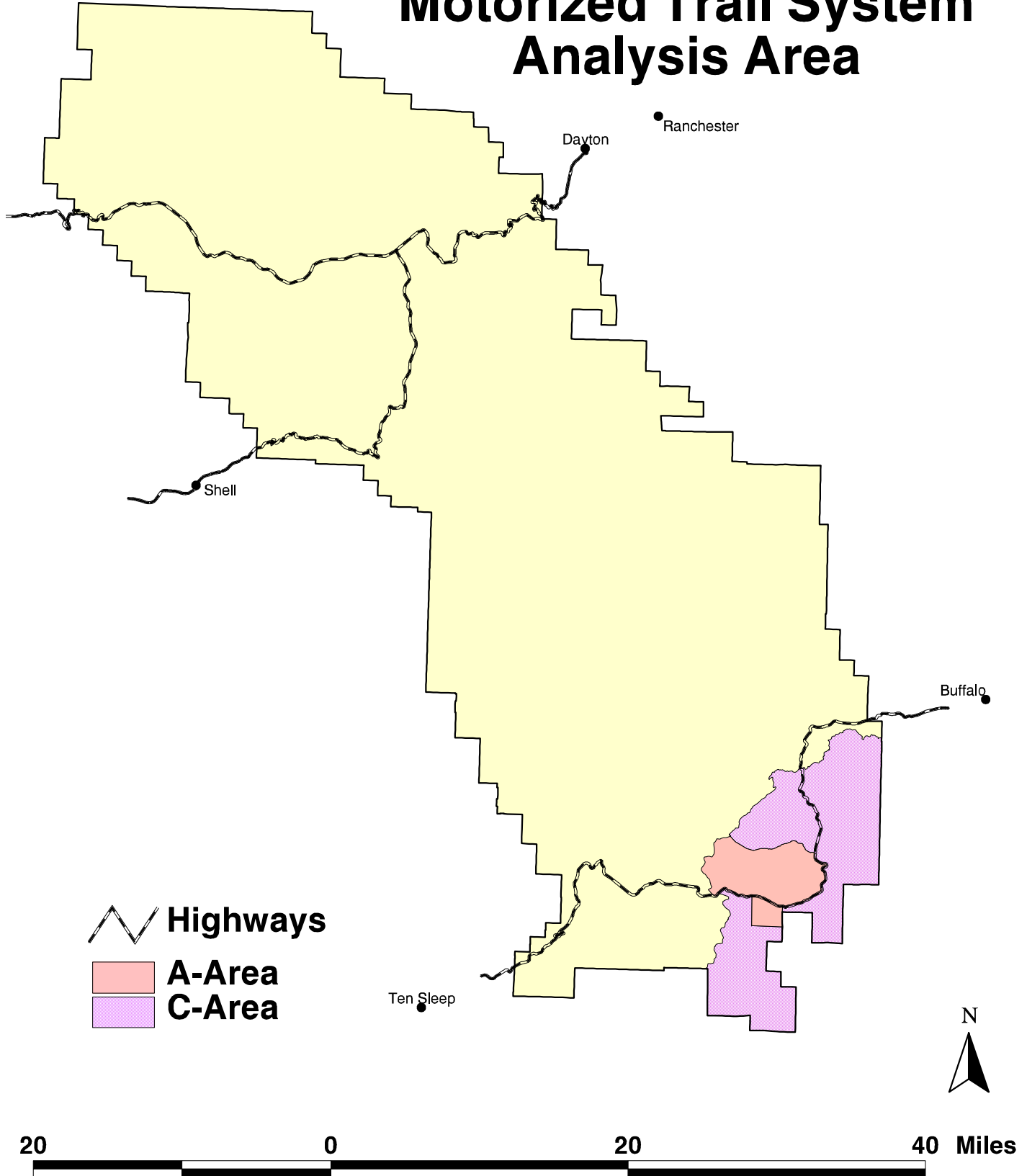
## PROPOSED ACTION

The Powder River Ranger District proposes a change in its travel management in the analysis area. Alternative 3 is the preferred alternative in this EA. See Chapter Two for specific proposed action and alternatives.

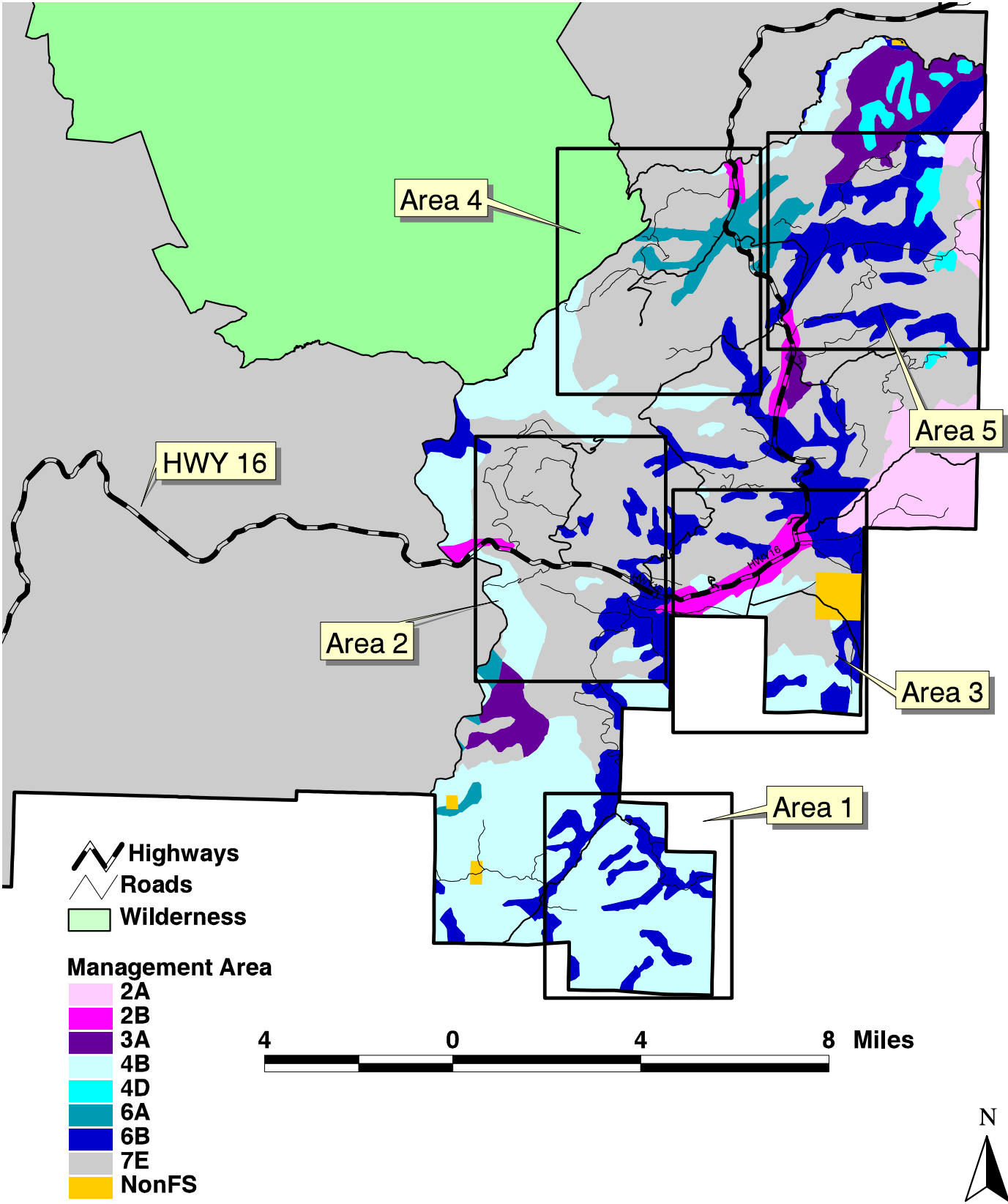
The proposed change from the existing Bighorn National Forest Visitor Map would be the elimination of off-road/trail cross-country motorized travel that is currently allowed on over 68,000 acres and the requirement that motorized travel be allowed only on designated roads and trails. The other 19,000 plus acres are in a designated motorized travel area under the Caribou Timber Sale Decision in 1998. Some existing trails would be designated as non-motorized in the analysis area in order to reduce conflicts between non-motorized and motorized recreation users. Some of these routes currently provide motorized access to the Cloud Peak Wilderness. Snowmobile use in the area would continue as currently managed.

The proposed travel plan describes the roads and areas where various types of motorized vehicles are allowed in the area. Proposed changes are consistent with the standards and guidelines in the Bighorn National Forest Land and Resource Management Plan. Proposed changes in the travel plan are based on information received from the public, an inventory of vehicle impacts on natural resources, and an evaluation of resource capabilities.

# Clear / Crazy Designated Motorized Trail System Analysis Area



# Management Areas



## Chapter 2

## Chapter 2 Alternatives

### Alternative 1 (No Action)

Alternative 1 is the No Action alternative and would be a continuation of the current travel plan shown on the 1998 Bighorn National Forest Visitor map for the Clear/Crazy watersheds. The one change to the 1998 map is the 1998 decision for the Caribou Timber Sale which included limiting motorized travel to designated routes in an area south of Pole Creek and west and north of US 16 from Pole Creek west to the Powder River Pass area. This area is just over 19,000 acres.

Motorized travel off roads and trails would continue to be allowed on 68,785 acres of the Clear/Crazy project area and prohibited on the 19,466 acres in accordance with the Caribou Timber Sale decision. The off road motorized travel would be allowed provided resource damage or disturbance to wildlife or other resources does not occur. Winter travel by snowmachine over snow would continue in this area.

This alternative would provide 193.1 miles of open system roads, 9.4 miles of system motorized trails, and 5.9 miles of non-motorized trails. In addition, there are approximately 40 to 50 miles of user-created routes as inventoried in the fall of 2002. The miles of user-created ORV routes have probably increased with repeated cross-country motorized travel in previously untrailed areas.

Current environmental conditions and impacts would continue. In order to comply with Forest Plan Standards and Guidelines, increased enforcement and education would be needed. The creation of non system routes may require some of those routes be closed to meet the current FP standards and guidelines.

### Alternative 2 (Proposed Action)

The proposed action will provide loop trails for motorized trail vehicles, popularly called Off-Road Vehicles (ORV) and provide for soil, water and wildlife protections.

All cross-country motorized travel will be prohibited within the project area. Motorized travel by ORVs up to 50 inches wide and 900 pounds will be allowed on open numbered roads or numbered trails designated as open for ORV travel. Full sized motorized vehicles (automobiles and trucks) will continue to be permitted on open-numbered Forest Roads.

This alternative would provide 185 miles of open system roads with ½ mile of new road and 6 miles decommissioned (closed and revegetated) and 22.0 miles of system motorized trails including 7.0 miles of new trail for motorized and 14.9 miles of non-motorized trails. In addition, there are approximately 45 miles of user-created ORV routes planned for decommissioning. However, this number has probably increased with new routes created by repeated cross-country motorized travel.

- Area Map 1: Doyle Creek Area - Forest Roads 514 will connect by new ORV route northeast of 516 to connect existing user-created ORV route to 533. (Hazelton Road is not enrolled in the Wyoming State ORV trail system at this time.) Two spurs from the new ORV route will tie back to Doyle Creek to provide stream access. Forest Road 516 will be decommissioned from just east of Doyle Creek Campground eastward to the user-created ORV route which crosses Doyle

Creek. The length of the decommissioned road is 1.5 miles. This ORV trail loop will be open for motorized trail use from June 15 to December 15 of each year. The seasonal restriction is due to elk calving and security needs. The length of this trail from Hazelton Road east through the Taylor and Doyle creeks and back to the Hazelton Road is 13.0 miles. Two miles are new ORV trail, 3.3 miles are existing open road, 7.3 miles are commissioning and reconstructing to standard the user-created ORV trail and 0.4 miles are conversion of closed Forest Road to designated ORV trail. Designate and construct an ORV staging area just east of Doyle Creek Campground. (See Area 1 map – Alternative 2.)

- Area Map 2: Hazelton Peaks and Hesse Creek Area - Forest Roads 448, 486, 484, 485 and 481 along with closed Forest Road 522223 with approximately ¼ mile of new ORV trail will connect Munkres Pass area and the areas west of Powder River Pass to the east side of Hazelton Peaks. Forest Roads 522214, 615, 447 and 449 along with FT 210 will provide the Hesse Creek loop. Additionally, this loop will be connected to Pole Creek Road, Forest Road 31, and the Hazelton Peaks. The ORV trail connection to Pole Creek Road will be on Forest Road 522114 which is currently a closed road. The connection to the Hazelton Loop is south on Forest Road 28, Sheep Mountain Road then across US 16 to Munkres Pass Road, FR 448. The FT 210 segment will need to be constructed to allow ORV passage. This route will parallel US 16 on the north side of the highway and be no more than ½ mile from US 16. The length of this trail is 17.9 miles. Seven-tenths of one mile is new ORV trail, 13.8 miles are existing open road, 0.3 mile are commissioning and reconstructing to standard user-created ORV trail and 3.1 miles are conversion of closed Forest Road to ORV trail. The length of the restoration is 2.0 miles and consists of previously closed roads number 522112 and 522416 which parallel the North Fork of Crazy Woman between Forest Road 28, Sheep Mountain Road, and Forest Road 449, Hesse Creek Road. Decommission FR 614 and 615. (See Area 2 map – Alternative 2.)
- Area Map 3: Billy Creek Areas – Designate and realign as needed FR 464 and user-created ORV trail to Poison Creek to provide an ORV trail to Poison Creek. Designate parking areas at the end of this route and Forest Road 465 to provide for ORV parking. The length of this trail is 0.6 miles. The entire trail miles are commissioning and reconstructing to standard user-created ORV trail. Commission and number 3.0 miles of user-created roads (Designated A, B, C, and D on Area 3 map.) as Forest Roads to access dispersed recreation camp sites. (See Area 3 map – Alternative 2.)
- Area Map 4: Sourdough Area – Construct a Forest Road 0.5 miles to connect from 382 to 491 near the old Hanson Sawmill site. Decommission the existing Forest Road 612 for 0.5 miles from Forest Road 491 to Forest Road 382 to protect the unnamed live stream. The total length of the ORV trail loop from US 16 west on Forest Road 382 and returning to US 16 by Forest Road 23 is 7.1 miles. Convert Forest Road 491 about ¼ mile west of Hanson Sawmill site for 2.4 miles west to the Cloud Peak Wilderness boundary to a non-motorized trail. The steep trail will be relocated to a sustainable grade. Decommission FR 494 for 0.9 miles since it is immediately adjacent to a live stream. (See Area 4 map – Alternative 2.)
- Area Map 5: Elgin Park Area – Forest Roads 372, 605, and 460 with existing FT 192 will provide an ORV loop. A short section of ORV trail reroute will be identified and constructed as soon as funding is available to bypass the private property at the east end of Elgin Park.

Additionally, FR 460 for 0.8 miles north of the junction of FT 192 and FR 460 and FR 370 from its junction with FR 372 to the Cross H cow camp will be decommissioned due to sedimentation and habitat loss in Grommund Creek. The length of this ORV loop is 20.4 miles. Three quarters of one mile is new ORV trail, 17.6 miles are existing open road, 1.5 miles is existing open motorized trail and 0.6 miles are conversion of closed Forest Road to ORV trail. Forest Trails 217, 408, 407 and 403 will be converted to non-motorized trails. Total miles of trail converted to non-motorized use are 5.9 miles. A short ORV trail connection about ¼ mile in length will be constructed from FR 461 south to Caribou Mesa by opening 0.6 miles of closed Forest Road 531414. The old snowmobile route will not be used as it traverses wet lands. The location for this new segment of ORV trail is just east of US 16. (See Area 5 map – Alternative 2.)

- Close and restore, as needed, all other user-created routes not designated as open to motorized travel in Project Area to prevent continued use by ORVs. User-created routes are known to exist in the Hazelton Peaks, Doyle Creek, Taylor Creek, Poison Creek and Elgin Park areas. Restoration will include recontouring, ripping and seeding or other closure devices as needed to prevent ORV use of closed routes.
- A route from Hunter Creek Road, FR 19, south to the Elgin Park Road, FR 22, adjacent to US 16 will be done in the future to provide access from the Developed Recreation sites to the ORV loop trails. This ORV trail will be 4.4 miles in length. This portion of the decision will be implemented after the other ORV route implementation tasks are completed. The route will be on the east side of US 16 as much as possible to minimize impacts to the view shed of the mountain peaks as seen from the State and Federal Designated Scenic Byway, US 16.
- Install ORV cattle guards at all locations where ORV trails pass through fences.
- Designate user-created roads as Forest Roads to provide access to the heaviest used dispersed campsites. (See the maps for areas.) These designated roads will include Elgin Park – Area 5 – Routes labeled A, B, and C; Caribou area; and Billy Creek – Area 3, routes labeled A, B, C, and D. The total length of new commissioned Forest Roads is 4.9 miles.
- Conditions of motorized use: Seasonal road closures to motorized wheeled vehicles will be implemented on all roads in the analysis area after big game hunting season until June 15 when spring break up conditions typically end or earlier if conditions allow .
- ORV use will be restricted to the designated ORV trails. Incidental parking immediately adjacent to a designated trail will be permitted.

### Alternative 3

Alternative 3 is similar to Alternative 2 but more limited in miles of ORV trails designated open for motorized travel. An additional 8 miles of Forest Road would be decommissioned. This alternative was developed from issues raised during scoping.

This alternative would provide 180.4 miles of open system roads with ½ mile of new road and 10.2 miles of road decommissioned (closed and revegetated) and 14 miles of system motorized trails with

6.3 miles of new trail for motorized and 15.6 miles of non-motorized trails. In addition, there are approximately 50 miles of user-created ORV routes planned for decommissioning.

- Area Map 1: Doyle Creek Area – close FR 533 at its junction with County Road 3, Hazelton Road. Provide “b” loop and accesses to Doyle Creek only. Decommission loop “A” from Doyle Creek south and west to FR 533. (See Area 1 map – Alternative 3.)
- Area Map 2: Hazelton Peaks and Hesse Creek Area - In addition to Alternative 2 include the decommissioning of FR 445, 446, 447 spurs, 614 and 615. (See Area 2 map – Alternative 3.)
- Area Map 3: Billy Creek Areas – Decommission the user-created ORV south from the end of FR 464 to Poison Creek. Establish the parking area at the end of FR 464. (See Area 3 map – Alternative 3.)
- Area Map 4: Sourdough Area – No changes from Alternative 2.
- Area Map 5: Elgin Park Area – Decommission FR 605 beyond its junction with FT 192. Designate FT 192 as a non motorized trail for horse, foot and bicycle use only. (See Area 5 map – Alternative 3.)
- No other changes from Alternative 2.

Maps in Appendix A.

### **Alternatives Considered But Not Analyzed In Detail**

Alternative listed below were considered but eliminated from further detailed study during the analysis process.

- Do Not Close “C” area to off-road motorized use.
  - This alternative was eliminated as it is similar to the existing No Action Alternative.
- Designate or create more motorized trails for specialized vehicles such as rock crawlers, single tracks and learners’ loops near campgrounds.
  - The alternative was eliminated due to lack of suitable terrain for these proposed uses. Other actions suggested are beyond the scope of the purpose and need of this project but could be considered in the future.
- Open all trails in the Project area to motorized use.
  - The alternative was eliminated as it would not provide a range of user activities in the project area. The Forest Plan provides for non-motorized as well as motorized recreation activities. Existing resource damage concerns from increasing use and user-created trails need addressed.
- Permit ORV access from private land directly onto National Forest System lands.
  - The alternative was eliminated because it is not permissible to provide exclusive motorized access to NFS lands from private property. Any access to the National Forest needs to be available to the general public.
- Designate ORV trails in Area 1 and 5 open to motorized travel only from June 15 to September 1 of each year for elk security.
  - Consideration was given to implementing a seasonal closure in the Doyle Creek loop in Area 1 and in Elgin Park in Area 5 to benefit elk security. However, due to the timing constraints of potential elk calving use of the area extending through June 15<sup>th</sup>, and the beginning of the hunting season in early September, the administration or enforcement of

this was not deemed feasible at this time. Elk use of security areas beginning in early July may also not allow for sufficient time for elk to establish patterns to use these areas.

### Comparison of Alternatives

Table 1 displays the miles of roads and trails (existing and proposed) for each alternative.

Feature	Status	Alternative 1	Alternative 2	Alternative 3
Roads	Open	193	185	180
Roads	Proposed	0	0.5	0.5
Roads	Decommissioned	0	6	10
Roads	Converted to Trails	0	2	3
Trails	Motorized	9	22	14
Trails	Non-motorized	6	15	16
Trails	Proposed Motorized	0	7	6
Trails	Decommissioned	0	45	50
Stream x-ings	Active	118	105	102
Stream x-ings	Proposed	0	3	3
Stream x-ings	Removed	0	13	16
Acres	Open to motorized cross-country travel	68,785	0	0
Acres	Closed to motorized cross-country travel	19,466	88,251	88,251

## Chapter 3

## Chapter 3

### Affected Environment and Environmental Consequences

This chapter explains the current condition (affected environment) of the analysis area. These environmental conditions form the basis for determining what changes and impacts would occur if each alternative were implemented. The environmental consequences are described following the affected environment for each key issue.

#### Key Issues Analyzed:

1. Recreation (appropriate ORV access and dispersed camping while providing for nonmotorized opportunities) – miles of trail open/percentage of area within 1 mile of road/ motorized trail; and miles of motorized trails.
2. Threatened, Endangered, and Sensitive Species
3. Wildlife – elk security, road density, and stream crossing density.
4. Soil and Water – soils, riparian and wet lands.
5. Rangeland vegetation and invasive species.
6. Heritage – 106 compliance and State Historic Preservation Office (SHPO) clearance

### **1. Recreation – Appropriate ORV Access**

#### Affected Environment

The Clear/Crazy area provides recreation users with a wide range of developed and dispersed recreation opportunities. Many of the recreation opportunities and uses are concentrated in the Elgin Park, Sourdough and Billy Creek areas. Visitors with off-road vehicles (ORV) use the Elgin Park area since it is currently open to cross country motorized travel and has large open meadows. The amount of ORV use has been increasing yearly for the last five to ten years and noticeably increased in 2003 with the issuance of the state of Wyoming's 2003 ORV map for the Bighorn National Forest which made it easier for ORV enthusiasts to locate motorized route opportunities. See Table 1 in Chapter 2 for summary of motorized trails.

#### Dispersed Recreation

During 2002 and 2003, inventories were conducted in the analysis area to evaluate dispersed campsite conditions in accordance with Forest Plan monitoring. Approximately 450 sites were inventoried. Many of these sites are along user-created full size vehicle routes more than 300 feet from an open Forest Road (FR). These user-created routes are located on dry ridges and none cross live streams. Modern dispersed camping is done with self-contained trailers or Recreation Vehicles. At times, persons monitoring had difficulty locating sites used by recreationists camping in self-contained campers because the vehicle was gone from the campsites. It is highly possible that there are in fact more dispersed campsites than the number evaluated during monitoring efforts.

Use of the dispersed campsites is mainly a summer season activity. There is a limited amount of hunting season camping, estimated to be less than 10% of the summer use. Wyoming Game and Fish Department has limited numbers of hunting permits available in the hunt areas within the analysis area. Therefore demand is limited for fall camping.

Over the last ten to fifteen years ORV users have pioneered many miles of user-created routes throughout the analysis area. The last survey was done in the fall of 2002. Approximately 40 to 50 miles of user-created ORV routes were mapped. However, in the year and one half since that survey, additional miles of user-created routes have been identified. Reports continue to be received of new user-created ORV routes found in previously untrailed portions of the analysis area.

### Environmental Consequences

#### Direct and Indirect Effects

##### Alternative 1 (No Action)

User-created non-system routes will continue to develop and lead to increasing resource damage through repeated and increasing motorized ORV use. Resource damage and social conflicts associated with motorized traffic in dispersed camping areas will continue and increase. Motorized access to developed campgrounds is limited to direct travel directly to the campground and to the designated campsites. Dispersed campsites will continue to be accessed by motorized vehicles, both full size and ORV. Existing conflicts between motorized and non-motorized users would continue and increase as the total number of recreation users increases. Access to all the current dispersed campsites would be maintained.

Motorized trespass into the Cloud Peak Wilderness will continue at current levels or may even increase as ORVs become more powerful, numerous, and able to travel over more difficult terrain.

##### Alternative 2 (Proposed Action)

Some user-created ORV routes will begin to recover as soon as motorized travel is stopped. Any route which directly ascends/descends a hill and has bare ground will continue to erode unless some restoration work is implemented to stop the erosion. Some system routes would continue to experience erosion and deterioration. It is estimated that 92 % of the area would be within one mile of an open Forest Road or motorized trail.

All dispersed campsites within 300 feet of an open Forest Road would be available for motorized camping. Approximately 90% of the inventoried sites would be accessible on user-created Forest Roads which are to be added to the system and marked with a road number on the ground under this Alternative. Campsite inventory records are on file at the Powder River Ranger District office. The rest of the sites are available for camping but no motorized access would be permitted. There may be a small number of popular dispersed campsites which would no longer be available to motorized access.

All motorized users would be limited to 300 feet from an open number Forest Road or designated motorized trail. Some hunting opportunities may be lost for hunters who could not or would not carry their game animal out to a system route open to motorized use. Some opportunity may also be lost for people with limited mobility. Motorized access to the Cloud Peak Wilderness from Sourdough drainage is converted to non-motorized access. This will reduce the number of illegal motorized trespasses which occur into the Cloud Peak Wilderness from these accesses.

##### Alternative 3

Effects in Alternative 3 are very similar to Alternative 2 but slightly more restrictive. Approximately 90 % of the area would be within one mile of an open road or designated ORV trail. Dispersed camping sites effects are the same as Alternative 2.

Wilderness motorized trespass effects are the same as Alt 2.

### **Cumulative Effects**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use.

#### **Alternative 1 (No Action)**

Loss of vegetation and soil erosion will continue and probably increase in severity throughout the analysis area. User-created trail sections will be increasingly visually noticed in the parks and meadows and be in conflict with the more pristine ROS classifications. Erosion on trails causes ORV riders to create new parallel routes and the cycle of vegetation loss and soil erosion increases. This trail braiding may eventually cause all suitable trail routes to be unusable. Education may have a positive effect on many users to reduce impact. However, without a specific prohibition on motorized cross-country travel new routes are highly likely to be created.

In the Elgin Park area there is a network of maintained, developed and signed horse trails. The number of non-motorized users who enjoy these horse trails may decline if cross-country motorized use continues to be permitted. As non-motorized users seek to enjoy NFS lands out of sight and sound of motorized users more conflicts between these user groups are likely and satisfaction levels for the non-motorized users will decrease. Displacement of the non-motorized users from heavily used motorized areas will occur if other areas are available for the non-motorized visitors, creating the potential for overcrowding in the remaining non-motorized areas, and resultant decline in visitor satisfaction.

With the continued development of the private land around the analysis area, growth in the use of the area will continue. Over the last ten to fifteen years, sales of cabin sites and construction of cabins on lands adjacent to the National Forest has grown dramatically. An estimated 150 to 200 cabins now exist east and south of the analysis area. As these cabin owners do not own sufficient acres to ride ORV on their own property, they turn to the National Forest to provide this recreation opportunity. Most of the routes created by users in the analysis area originate near these recently developed areas off the National Forest. With no slow down expected in the sale and development of the private lands adjacent to this area of the National Forest, this trend is expected to continue.

#### **Alternative 2 (Proposed Action) and 3**

Either of these alternatives, combined with education and enforcement will reduce but not eliminate the resource impacts caused by the user-created routes developed over the last ten to fifteen years. Conflicts with non-motorized users will be reduced and allow for the continued various nonmotorized and motorized uses especially in the Elgin Park area.

Alternatives 2 and 3 continue the trend of closing areas to cross-country motorized travel. This began just north of the analysis area in the late 1970's in the Hospital Hill and Hunter Mesa areas for wildlife protection. It continued with the Little Goose/Park Reservoir Travel Management decision of 1997 and concurrently with the Clear/Crazy project is the Woodrock EIS which includes travel management actions.

One area remains open to motorized cross country travel. The Hunt Mountain area on the northwest portion of the Bighorn National Forest remains open at least until the Forest Plan revision decision scheduled for 2005.

## **2. Threatened, Endangered, and Sensitive Species**

### **Affected Environment**

Federally threatened, endangered, and Forest Service sensitive (TES) species were considered in this project. Threatened species that have the potential to occur in the project area as indicated by a list obtained from the US Fish and Wildlife Service (2003) include the Canada lynx and the bald eagle. There are no endangered, candidate, or proposed species that have the potential to occur on the Forest currently.

The project area is outside of any of the Lynx Analysis Units developed by the Forest in conjunction with the US Fish and Wildlife Service (2000) to track effects to potential habitat for this species. There are currently no known sightings of lynx within the project area, though historical observations from 1980 and earlier have occurred.

The bald eagle is not known to nest or have winter roosts on the Forest currently. Use of the Forest and the project area is on a migratory, foraging basis.

The Rocky Mountain Regional Forester established a new list of Forest Service sensitive species in 2003. These are species for which there are significant concerns about the future viability of the species. There are 6 plant species that could potentially occur in the project area. There are no fish species, and one amphibian species with potential habitat in the project area. There are 12 avian species and 6 mammals that have the potential to occur in the project area.

Refer to the Biological Assessment in the project record for further details on these species. There were no specific locations of any known individuals or populations of TES species that resulted in a different configuration of any of the alternatives. There are no current habitat impacts known to be limiting the presence or viability of any of the TES species within the project area. Road networks and past vegetation changes from wildfires, timber harvest, and livestock grazing may affect the distribution or use of habitat by species within the project area.

### **Environmental Consequences**

#### **Direct and Indirect Effects**

##### **Alternative 1 (No Action)**

A Biological Evaluation for Threatened, Endangered, and Sensitive (TES) species was completed for this project (See Project Record) that details direct, indirect, and cumulative effects. In general, Alternative 1 would not allow for any improved habitat conditions for any of the species considered, as vegetation resources would continue to be impacted by off-road use. There are no immediate threats known to any of the TES species considered. However there would be potential habitat for several species impacted by current and likely increased use trends of recreation in the near future. Determinations of effects for species would largely be similar to those described below for Alternatives 2 and 3 due to uncertainties or lack of distribution data to indicate otherwise.

## Alternatives 2 (Proposed Action) and 3

As mentioned previously, the Biological Evaluation for TES species details more of the direct, indirect, and cumulative effects for these species. Alternatives 2 and 3 would result in similar determinations of viability for TES species. While Alternative 3 would allow for less disturbance overall, the amounts are not likely significant to affect any of these species analyzed. In considering effects for these species, Forest Service Manual direction (2670) require determination statements be used.

### **Cumulative Effects**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use. Cumulative effects considered in the project area and within one mile of the Forest Boundary included noxious weeds, urban development, logging, and recreation uses which are all anticipated to increase. Ongoing Forest management activities include timber harvest, livestock grazing, recreation and special uses, and prescribed burning. As described in the Biological Evaluation, the following determinations apply:

There would be “no effect” to either the bald eagle or the Canada lynx from the proposed alternatives. There are no known eagle occurrences in terms of nesting or roosting habitat use. The project area does not contain any habitat mapped in a Lynx Analysis Unit, nor would project proposals interrupt any key linkage areas for the lynx, both of which form the basis for determining effects for this species (Ruediger et al 2000).

There would be “no impact” to the following sensitive species:

Plants:	Cypripedium parviflorum, Cypripedium montanum, Eriophorum chamissonis, Festuca hallii, Parnassia kotzebuei, Penstemon caryi, Physaria didymocarpa, Pyrrocoma, clementis, Rubus acaulis, Utricularia minor.
Fish:	Yellowstone cutthroat trout, mountain sucker.
Amphibians:	Northern leopard frog, spotted frog, wood frog
Birds:	Peregrine falcon, greater sage grouse, flammulated owl, Lewis’ woodpecker, Brewer’s sparrow, harlequin duck, sage sparrow.
Mammals:	Wolverine, Townsend’s big-eared bat, spotted bat, fringed-tailed myotis, river otter.

The following species received a “may impact individuals or habitat, but not likely to lead to a trend toward federal listing” determination:

Birds: Boreal owl, short-eared owl, northern harrier, northern goshawk, three-toed woodpecker, olive-sided flycatcher, loggerhead shrike, grasshopper sparrow.

Mammals: Marten, water vole.

## **3. Wildlife – elk security/road density/stream crossing density**

### **Affected Environment**

#### **Wildlife/MIS**

The Clear/Crazy project area supports a diversity of wildlife species, from hundreds of invertebrate species, dozens of resident and migratory bird species, small mammals, to moose and elk, all of which are valued by people for both consumptive and non-consumptive uses. Abundance of wildlife is often tied to prey and forage levels tied to climatic factors that vary annually. Wildlife species present are largely a function of the

vegetated and non-vegetated habitat elements in the project area, which include areas of bare ground, cliffs and rock outcrops, grassland dominated meadows, willow and sedge dominated riparian areas, aspen stands, and conifer cover types. The most valuable wildlife habitats on the Forest are viewed as the riparian, aspen, and spruce-fir resources due to the habitat components they provide and the diversity of species inhabiting these areas. The project area is dominated by lodgepole pine cover types, interspersed with grassland meadows and riparian areas and a few small lakes. There is a strong aspen component in the project area as compared to other areas of the Forest, but few areas of the spruce-fir cover type. Cliffs and rocky outcrops are a component of the project area largely near the Forest boundary on the east edge of the project area.

As a surrogate for managing for the viability of all wildlife species, the Forest Service designates Management Indicator Species (MIS), as required by the 1982 implementing regulations (36 CFR 219.19) for the National Forest Management Act (1976). In 2002, the Bighorn NF amended its 1985 Plan (Amendment 15) to revise the list of MIS originally considered in the Plan due primarily to the monitoring implications, as National Forests are responsible for monitoring population trends of MIS on each National Forest. The amended list of MIS includes elk, red squirrel, lark sparrow, red-breasted nuthatch, white-crowned sparrow, and the three-toed woodpecker. For this analysis, elk were selected as the only MIS due to their habitat relationships with or sensitivity to human use disturbances, particularly recreation. The red squirrel, red-breasted nuthatch, and three-toed woodpecker were not selected as they are more sensitive to changes in the amount and distribution of mature conifer, which this project would not be altering by measurable amounts. Similarly, the lark sparrow and white-crowned sparrow were not selected since they are associated with changes to habitat condition of grasslands and montane riparian areas, which this project would not be significantly changing. These latter two species are typically associated with changes in livestock management or influences from prescribed burning.

Elk populations within the project area are currently stable, and are above the population objectives set by the Wyoming Game and Fish Department. Elk populations are managed through hunt area and herd unit objectives. The project area includes portions of Hunt Areas 34 and 35, which comprise smaller portions of the North Bighorn and South Bighorn Herd Units. Elk can serve as an indicator for other wildlife in terms of secure habitat available. Elk are habitat generalists in that they use grassland cover types primarily for foraging, and forested cover types primarily for cover. Elk are also acknowledged as being strongly influenced by road and trail systems (Stouder 2002; Lyon and Burcham 1998; Toweill and Thomas 2002). Elk winter primarily south and east of the project area, though some winter use occurs in the northeast corner of the project area in the area of Hospital Hill. Existing travel management restrictions occur to reduce motorized use of some roads in winter range.

### **Background and Selection of Analysis Method for Elk (MIS)**

Habitat evaluation and analysis procedures established by the 1985 Plan include hiding cover, which is defined as vegetation that is capable of hiding 90% of a mature elk from view at 200 feet (Lyon and Christensen 1992). However, beginning in 1990, the Forest recognized that managing solely for blocks of vegetation did not include the important variable of human access or disturbance potential to elk. In support of the plan amendment begun to assess the allowable sale quantity of timber resources, the interagency Wildlife Task Force developed a Habitat Effectiveness model for elk that sought to incorporate the effect of human use disturbance to elk from open roads and motorized trails (USFS 1991). However, this amendment was not completed, but the Forest sought to begin including the Habitat Effectiveness model into project level decisions as an analysis tool (USFS 1992), though results or implications of the model cannot necessarily be tied to the Forest-wide guideline of 40% habitat effectiveness (USFS 1985, III-36) since the amendment that would have allowed this was not completed. Then, from research on the Bighorn NF including this project area, the potential for disturbance elements (open roads and trails) to affect elk movement and use of habitat was refined for local conditions (Sawyer 1997), with a new habitat effectiveness

and an elk security model suggested by the WGFD (Jellison 1997). These new models were not incorporated into the 1985 Plan, though they are being used to develop the elk security guideline for the Revised Plan. As such, these models and/or the elk security guideline currently proposed are not yet required for use due to the pending plan revision.

However, since this project seeks to stem the interim period before the Revised Plan is implemented, with both the provision for “C” areas being revoked and the establishment of the elk security guideline, elk security was selected for this project as the measure for the effectiveness of habitat, being somewhat correlated to the 40% habitat capability guideline in the 1985 Plan. Public response to scoping for this project also included wildlife security, which was carried forward as a key issue for this project. Similar analysis and results to elk security would occur if the 1991 Habitat Effectiveness model for elk were used, as described above. The HABCAP analysis and model prescribed by the 1985 Plan that correlates to the 40% weighted habitat capability guideline responds only to the changes in vegetation resulting from disturbances, and this project would not measurably change the amount or distribution of habitat structural stages of vegetation. Currently, the project area is comprised of approximately 34% hiding cover, whereas the weighted average for Forest Plan management areas would require 42%, so it is below the recommended threshold in terms of cover. Using the 1991 Habitat Effectiveness model, Hunt Area 35 in the project area is at approximately 34% effectiveness compared to a minimum suggested of 50% by weighted forest plan management areas by diversity unit. Hunt Area 34 is at approximately 62% from a suggested minimum of 64% (USFS 1997). Diversity units, approximately 5,000 acres in size, were the required scale for analysis of effects with the 1985 Plan, but were deemed too small for this size of a project area.

### **Elk Security**

Elk security is defined as any area that will hold elk during periods of stress (Lyon and Christensen 1992), and was refined by Hillis et al (1991) to denote areas of forested cover greater than 250 acres in size, non-linear in arrangement, that are located greater than ½ mile away from any open road or motorized trail. As suggested by Hillis et al (1991), it is desirable to have approximately 30% of a management unit in elk security habitat. Management units are typically scaled to the 5<sup>th</sup> level hydrologic unit code watershed or smaller area. The project area represents a suitable management unit for the purposes of this analysis.

On the Bighorn NF, elk begin selecting for secure areas in July primarily in response to increases of recreation use at that time (Jellison 1997), showing a preference for areas away from motorized areas since this type of access serves as the largest access routes for people. The Bighorn NF has modeled both existing and potential elk security habitat using its current GIS database coverage’s for vegetation, and system roads and trails. The difference between potential and existing elk security is focused on the current status of roads. Existing elk security are those areas that meet the definition described above, and include impacts from Maintenance Level 2 – 5 roads (open to motorized vehicles) and motorized trails. Potential elk security includes existing elk security, but also identifies areas that have the cover component intact that only need changes in the motorized trail and road status to make them currently effective. Potential elk security does not include areas affected by Maintenance Level 3 – 5 roads (graveled to paved), as it is anticipated that due to road investment in these higher standard roads, the Forest would not likely ever choose to close one of these roads. Existing and potential security areas represent decision flexibility and opportunities to improve the provision for this type of habitat for elk and other wildlife.

Currently, the project area has many past road construction projects creating some of the lowest amounts of elk security existing on the Forest. According to the model, within the 88,251 acres of the project area, there are approximately 26,389 acres of potential elk security. There are 9,255 acres of existing elk security areas, representing approximately 11% of the total project area acres, or 35% of the potential elk security acres. This is well below the recommended minimum by the literature. Indirectly, the reduction in elk security in

the past few decades has led the WGFD to restrict hunting opportunity from general season licenses for elk, to limited application licenses to protect the bull: cow ratio. This has also likely had economic impacts to the local Buffalo community resulting from the overall loss of hunter days. It should be noted that the modeled level of elk security does not include the potential disturbance that exists from the approximately 55 miles of user-created routes in the project area, or the disturbance potential from existing off-road travel at large. When this factor is included, there are essentially no elk security areas remaining in the project area, as at any point in the future new routes could be pioneered into existing or potential elk security habitat. While the hiding cover component of elk security habitat is somewhat limited within the project area, the main factor contributing to loss of elk security are the open motorized roads, trails, and off-road areas. Recent timber sales conducted in the project area include the Caribou and Sheep Mountain Salvage sales, though many past sales have occurred in the project area as well. The Lost Fire from 1988 also removed some of the cover component of elk security within the project area that may require another 10 years of growth before it becomes potential or existing security.

In addition to elk security habitat, a simpler way of regarding potential disturbances to wildlife is to view open motorized route densities, expressed in miles of routes per square mile of area. Currently, there are approximately 217 miles of open, designated routes in the 138 square miles of the project area. This includes approximately 55 miles of user-created or unclassified roads. This equates to a route density of **1.58** miles per square mile.

### Environmental Consequences

#### Direct and Indirect Effects

##### Alternative 1 (No Action)

For this alternative, there would be no improvements to the existing condition of a lack of elk security areas as described in the Affected Environment. Over time, it is anticipated that further degradations of security habitat would occur with expanding recreation use. Again, the existing elk security area acres reported in the Affected Environment (9,225 acres in project area) are not realistic at all due to the 55 miles of user-created routes that occur in the project area that are not on the Forest road system, and were not included in initial modeling for elk security. With this alternative, it is anticipated that there would be less than 2,000 acres of elk security in the project area within 5 years. Elk would likely continue to exceed population objectives in the hunt areas associated with this project, as the management control of achieving a good harvest with hunters would continue to deteriorate as elk leave the National Forest in response to pressure without security areas. Indirectly, this could have local economic affects as well if hunter days made available by the WGFD declined in this area. This alternative could cause an increase in the overall population trend of elk on the Forest, causing some impacts to forage and browse resources if above the carrying capacity. Other wildlife species that may benefit from secure habitat could suffer from degraded habitat conditions, including marten, wolverine, goshawk, boreal owl, flammulated owl, great gray owl, pygmy nuthatch, and the black bear.

#### Cumulative Effects to Elk Security

For cumulative effects, the area considered would include the project area and the private and public land adjacent to the Forest within one mile of the Forest boundary. Cumulative effects to elk security would include any ongoing Forest management activities, and those in the reasonably foreseeable future. In addition, activities on the land adjacent to the Forest may impact elk security.

There is increased development and logging activity in the private lands adjacent to the Forest, along with continued livestock grazing, creating a loss of potential habitat in both grassland and conifer types, and a likely loss of existing and potential elk security. This places a higher value of habitats provided on the Forest. It is reasonable to assume that the development of the adjacent private lands would continue in the near future.

There are very few private lands within the Forest in the project area, and none are known to have planned development or expansion. There are no new facilities or developments occurring within the project area on the Forest that could create a permanent loss of habitat. Other management activities within the project area, in addition to motorized recreation activities, include livestock grazing, timber harvest, special uses (cabins, outfitter/guides, lodges, powerlines, etc.), dispersed recreation activities, and other vegetation management activities (aspen regeneration and fencing, prescribed burning, etc.). There are a few timber sales in the project area being completed (Caribou, Sheep Mountain Salvage), however no additional timber sales are planned in the near future, as the Sourdough timber sale was removed from a proposed decision. Timber stand improvement (thinning) will be occurring throughout the project area. The project area recently had grazing management adjusted with the Clear/Crazy Allotment Management Plan revision. The only proposed activity in the near future from the Forest Service on the NEPA quarterly announcement is for 30 acres of aspen treatment in the Muddy Guard cabin area.

Recreation uses are likely to continue to increase in the project area. Enforcement of the “no resource impact” provision of Forest management direction in the 1985 Forest Plan regarding roads would likely continue to be ineffective, creating a loss of habitat.

For Alternative 1, it is foreseeable the Revised Forest Plan would go into implementation phase, including provisions for the “C” area closure and the use of the elk security guideline and corresponding goals, objectives, and strategies. The project area would still need addressed in the future in terms of NEPA, to properly close any unneeded roads, including user-created non-system roads. No-action, in this case, would really mean “delayed action” necessary.

### Alternatives 2 (Proposed Action) and 3

In order to assess the affects to elk security, it was deemed more applicable to describe the effects according to the areas within which travel management decisions would be taking place, as described in the Alternatives section (Areas 1 – 5). In addition, effects will be summarized for the entire project area.

Direct effects to elk security would be the “loss” of any existing or potential elk security areas, described in acres. This may indirectly affect elk and other wildlife use or behavior in the project area in terms of disturbance by people, primarily from motorized recreation use. This can also indirectly affect hunting strategies and economics as described above. The following table summarizes the effects, in acres by area, by alternative. These acres represent acres that are anticipated to remain following implementation of the alternative, including gains from potential elk security converted to existing security. Refer to the maps in the project record to view a more detailed discussion of the effects. Only Areas 1 and 5 are described, as these are the only areas that had measurable differences in elk security resulting from the proposed alternatives.

Area	Alternative	Elk Security Acres
1	2	300
	3	4,142
5	2	2,159
	3	2,709
Project Area	2	7,885
	3	12,277

Areas 1 and 5 are the primary drivers of differences to elk security. Other areas receive minor changes that would not measurably affect elk security, but are improvements that benefit watershed and vegetation resources. As described in the Affected Environment, it is desirable according to the literature (Hillis et al 1991) to retain approximately 30% of a management unit in elk security. The Forest also identifies what it considers to be the maximum potential security areas, given that Level 3 – 5 roads would likely never be closed due to prior investments. The percent of potential figure shows how much of the project area would be considered elk security relative to its potential maximum. In order to display the effects to elk security at the project area or management unit scale, the following table illustrates the results of the alternatives.

Alternative	Elk Security Acres	% of Total Project Area	% of Potential Elk Security
2	7,885	9%	30%
3	12,277	14%	46%

Alternative 2 would have minor improvement in the amount of elk security areas in the project area as compared to the existing condition, though several of the user-created trails are retained in this alternative. The “reduction” in existing elk security area in this alternative from the current condition is due to the model not recognizing user-created roads when the initial existing security layer was created, since they are not Forest Service system roads. The loss of elk security is largely tied to the Doyle Creek loop, as this loop bisects several existing/potential elk security areas. Alternative 2 would do little to change the population trend for elk at the project scale or Forest-wide scale. Existing trends of not obtaining sufficient harvest of elk would continue, with no improvement in hunter day opportunities.

Alternative 3 would allow for substantial improvements over the existing condition for elk security. The Doyle Creek area (Area 1) is one of the last good potential security areas in the project area, and loss of this area would likely have more effects than the loss in other areas. This area is particularly important given adjacent land uses. The improvement in elk security may allow the elk population in the project area to be more effectively hunted, resulting in a better management scenario for retaining elk populations at their objective as established by WGFD, rather than exceeding them and having resource impacts. There would be little effect to the overall population trend of elk at the Forest-wide scale. There would not likely be any immediate increase in hunter day opportunities, however, due to the time required to affect elk behavior.

In addition to elk security, the following table indicates the effects to wildlife disturbance in general from open motorized route density in the project area. For Alternative 1, user-created routes are only included in the route density figure, as technically they are not “open” routes as they are not on the Forest system. Route densities assume that route decommissioning proposed in each alternative remain effectively closed.

Alternative	Miles of Open Road	Miles of Open Motorized Trail	Miles of Roads and Trails Decommissioned	Open Motorized Route Density (Mi./Sq.Mi.) – Roads and Trails
1	193	9	0	1.58
2	185	22	50	1.24
3	180	14	60	1.17

Decommissioned roads and trails would be primarily comprised of user-created routes not retained on the Forest road system. Decommissioning would involve effectively closing the roads to discourage any vehicle use of them, and to reestablish vegetation on the roadbed. Mechanized equipment would likely be used to accomplish this.

As described in the Alternatives section, approximately 5.7 miles of new motorized trail would be constructed in Alternative 2, and approximately 5.2 miles would be constructed in Alternative 3. The main source of new motorized trail to be constructed is the route that would parallel Highway 16, in both alternatives. It is anticipated that this route, though not planned for construction in the next three years, would be located immediately adjacent to the highway right-of-way. Effects from this may be minimal, as the existing highway provides a high level of potential disturbance to begin with. However, elk may also be adapted to the more constant use of the highway, and be more affected by slower disturbances from ATVs. Regardless, this route within Area 5 was not considered to affect elk security because of the existing highway.

### **Cumulative Effects**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use.

The cumulative effects from Alternatives 2 and 3 would be similar to those described for Alternative 1, with the exception that there would not be another analysis anticipated as a result of this decision. In addition, there are several Level 1 (“closed”) roads that would be retained in the project area, used or kept primarily for timber sale purposes. These roads, though closed to motorized travel, are primary routes for hunter access, and in many cases degrade elk security areas due to the volume of foot traffic they receive, as people are more likely to use roads to walk on as compared to traveling cross-country (Lyon and Burcham 1998).

With either of these alternatives, there may be the need in the future to develop a “staging area” in the Hunter Creek area to provide a parking or jump-off area for ATV use. This would be tied in to the loops proposed from these alternatives, and would likely be a small loss of actual vegetation habitat through construction, though no likely loss in terms of elk security.

## **4. Soil and Water – soils, riparian and wet lands**

### **Affected Environment**

Existing geologic and soil conditions within the analysis area were examined using summaries provided in the Soil Survey of the Bighorn National Forest, Wyoming (Nesser 1986). Eighteen different soil series are found within the analysis area. Each soil series includes detailed map units (MUs) representing a distinctive pattern of soils, relief, and drainage. Each MU has a unique set of soil properties and the soil survey contains useful predictions of soil behavior, suitability, and potential of a unit for selected land. Agneston, Rock Outcrop, and Tellman are the dominant map units in the cumulative effects boundaries and analysis area boundary. These soil types do not have any limitations for land management activities. Most of the map units that could be considered sensitive to management comprise a relatively small percentage of the area except for the Cryaquolls. Cryaquolls are easily impacted by land uses such as off-highway travel, poorly located roads, or improperly designed stream crossings, as these soils are typically found in riparian areas, and remain moist or saturated throughout the year.

### Riparian

Streams in the analysis area flow through low gradient meadows, with moderately broad riparian areas and through forested corridors and steep canyons, which connect the low gradient meadow reaches. Channel stability of stream reaches through riparian meadows is largely provided for by riparian vegetation in the form of root mass and density. In contrast, large rock, deep-rooted trees and shrubs, and woody debris provide for channel stability in the steeper stream reaches. In general, the steeper reaches are not easily impacted by management activities in the analysis area. Poorly located roads and improperly designed stream crossings can affect channel stability directly, by increasing sedimentation and streambank erosion within the channel.

### Environmental Consequences

#### Direct and Indirect Effects

##### Alternative 1 (No Action)

Water Quality would be maintained at the existing condition or continue to degrade. With some of the travel management area maintained as a “C” area, additional user-created routes and stream crossings would be created, further impacting water quality through excessive sediment delivery. There would be no improvement in soil conditions and soil compaction and displacement would continue to occur or expand at present rates by allowing for some unmanaged off-road travel.

Wetland and Riparian Communities – Wetland and riparian resources would not be improved under Alternative 1 as the road and trail network would not be changed from the existing condition. There could be additional impacts by allowing for off-road travel, which would increase the road density and have probable impacts to these areas. Stream channels would continue to be impacted by off-road vehicle travel in the form of stream crossings and user-created routes adjacent to streams.

##### Alternative 2 (Proposed Action)

Water quality would be slightly improved, with a net reduction of 10 stream crossings. There are also fewer miles of roads under this alternative, which would also help to improve water quality within the analysis area and cumulative effects boundaries, because of the reduced potential for direct excessive sediment delivery to the stream network. Hydrologic function would improve, mostly as a result of a reduction in the number of stream crossings that directly impact channel morphology at those locations and function as a conduit for overland flow concentrated on roads/trails.

There would be slight improvements to soils that are sensitive to management activities, with a reduction of approximately four miles of road on sensitive soil types. There would be an overall improvement to all soil resources with the reduction of road/trail miles. A slight improvement in riparian and wetland habitats is expected, with a decrease in road/trail miles within 100 feet of the stream network.

### Alternative 3

The largest improvement to overall water quality is reached with this alternative, relative to the three alternatives, as it has the highest number of stream crossings removed, with a reduction of 13 stream crossings. Hydrologic function would be improved the most, between all alternatives, with implementation of this alternative. This alternative has the highest reduction of stream crossings and road/trail miles.

Effects to soils under this alternative would be similar to those described under Alternative 2.

Effects to wetland and riparian communities under this alternative would be similar to those described under Alternative 2.

### **Cumulative Effects**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use.

Timber Harvesting – Silvicultural activity has occurred previously throughout the analysis area - Caribou, Sourdough, and a few other small sales. It is likely that timber harvest will occur in the future and may have additional impacts to the air, soil, and aquatic resources, as more roads/trails would be potentially built in addition to other ground disturbing activities.

## **5. Rangeland vegetation and invasive species**

### **Affected Environment**

Off-road vehicle use has resulted in a loss of vegetation and ground cover through continual disturbance and soil compaction. The proposed project area contains 88,251 acres, which contains upland, riparian, and timber vegetation types. Within the area, approximately 50 miles of pioneered or user-created trails have been inventoried. By converting miles to acres, at a minimum an additional 6 plus acres of forested and non-forested vegetation types are disturbed. These 50 miles of user-created trails include only the highly visible trails that had obvious impacts to soils and vegetation. Trails with low to moderate impact and trails created since the inventory was completed are not included in this figure.

Noxious weeds are a common threat to areas in and around the proposed project area. Plants are defined as noxious weeds if they are carriers or hosts of damaging insects or diseases or if they are overly aggressive, difficult to manage, parasitic, or poisonous (Ferguson et al, 2003). Off-road vehicle use not only is a means of transporting noxious weed seeds, but also disrupts native vegetation and disturbs soils, creating a viable seedbed for invasive plants.

According to the 2003 Johnson County Weed and Pest Annual Report, the project area currently contains 350 acres of noxious weeds, which can be found within disturbed sites such as roads, trails, burned areas and timber sales. The species found within the project area are primarily Canada thistle; however, species such as yellow toadflax, common mullein, wild licorice, houndstongue and leafy spurge have all been located nearby.

### Environmental Consequences

#### Direct and Indirect Effects

##### Alternative 1 (No Action)

Under this alternative, vegetation and soils will continue to be impacted, as off-road vehicle use would not be restricted.

The potential for infestations of Canada thistle and other noxious weeds would remain the same or increase as off-road vehicle use increases. Vehicles traveling off-road cause soil disturbance, providing an environment for noxious weed establishment. Vehicles used in off-road travel can also serve as the seed source for new populations of noxious weeds by transporting seeds that have become attached to the vehicle in other weed infested areas and dislodge while traversing an area.

Current off-road travel regulations, do however allow for easy access to weed treatment areas.

##### Alternative 2 (Proposed Action)

Vegetation and soil resources would benefit from this alternative due to the restriction of ORVs to a designated trail system. Disturbances would be limited to the proposed trail system and vegetation would have an opportunity to re-establish along the previously disturbed user-created routes.

The potential for new noxious weed infestations associated with off-road vehicle travel would decrease with this alternative from the current condition, because motorized travel would be restricted to designated roads and trails. The best potential for new infestations is associated with the construction of new roads and trails, creating disturbances that result in viable seedbeds for noxious weeds to inhabit. The majority of the proposed trails in this alternative are pre-existing user-created trails; however, approximately 5.16 miles of new trail are to be constructed.

Weed sprayers, in most cases, would be required to follow the same off-road travel restrictions as the general public, limiting efficiency in finding new infestations and treating areas away from the main trail system. Off-road use permits may be granted in such cases that are necessary to treat infested areas.

##### Alternative 3

Alternative 3 would have 4.6 fewer miles of roads and trails open and decommission 4.6 more miles than that of any other alternative, resulting in less impact on both vegetation and soils. Of all alternatives, alternative 3 will have the least impact to both vegetation and soil resources. See discussion under alternative 2 for additional information.

The potential for invasive noxious weeds with this alternative would be less than that of alternative 2. However, this alternative proposes 4.6 miles of road to be decommissioned, which may create a greater

receptive environment for the establishment of noxious weeds than would the alternative of implementing the miles into the trail system in the short term. The decommissioned roads and trails would have to be continuously patrolled and treated for invasive weeds. See discussion under alternative 2 for additional information.

### **Cumulative Effect**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use.

The cumulative effects for this project would be future activities in the project area and adjacent to National Forest lands that may have an effect on vegetation, soils and noxious weeds. Management activities within the project include timber sales, grazing, special uses, and recreation. The only proposed activity on the Forest is a 30 acre aspen treatment project near Muddy Guard Cabin, which will have little impact on potential noxious weed establishment, soils or vegetation resources. There is an increase in activity from adjacent private lands through logging, grazing, development, and off-road use, all of which increase the potential for spread of noxious weeds.

Of concern from the impacts of cumulative effects is the encroachment of noxious weeds. With the increase in recreational use and the activities adjacent to the Forest, invasive weeds will likely increase.

The cumulative effects for alternative 3 would be the same as alternative 2. Alternative 3 will have the least impact on noxious weed spread given the reduced miles of motorized routes open.

## **6. Heritage – Section 106 compliance and State Historic Preservation Office (SHPO) clearance**

### **Affected Environment**

During the summer of 2003 a Class I literature search was completed with SHPO's record office. Based on the results of the search, 19 historic and 24 prehistoric properties are presently recorded in the project area.

In accordance with the programmatic agreement (PA) signed by the Forest Service, the Wyoming State Historic Preservation Officer, and the Advisory Council on Historic Preservation, Bighorn National Forest staff will complete the appropriate inventory and consultation for a determination of no affect. In accordance with the (PA), 597 acres, or 8% of the total project area, were chosen as a representative sample.

At the completion of the 2003 field season 243 acres of the survey had been completed with three additional prehistoric sites and one historic site located. The survey/fieldwork for this project began in June of 2003. Testing and all field data were completed on these sites by the end of the 2003 field season. No additional work will be required on these sites.

Survey/fieldwork is scheduled to resume mid May to early June of 2004. Project completion is expected by late August to early September of 2004. The Inventory report and SHPO comments are expected to be finalized by the beginning of October.

### **Environmental Consequences**

## Direct and Indirect Effects

### Alternative 1 (No Action)

No change from current management actions. Sites could be impacted by the creation of additional unauthorized user-created routes.

### Alternative 2 (Proposed Action) and 3

Fieldwork is not completed and must be finished before the final decision. This will be done in accordance with the PA between the Bighorn National Forest, Wyoming SHPO, and the Advisory Council. Final decision is conditioned on SHPO's concurrence with Forest recommendations. Any effects to inventoried sites will be mitigated to non-significance. The specific measures will be included in the final report for SHPO concurrence. The final decision on this Environmental Assessment will not be made until the PA process is completed. This is expected by October 2004.

### **Cumulative Effects:**

Cumulative effects are summarized at the end of this chapter in Chart 1 and 2. For this issue, the primary factors are road maintenance, thinning, noxious weed management, livestock and recreation use.

The cumulative impacts for the heritage resource are unknown at this time. However, per the PA future impacts would be mitigated to non-significance prior to project implementation, and with SHPO concurrence.

## **Mitigation**

1. The best way to avoid resource damage associated with trail braiding and trail abandonment is to maintain trails prior to their deterioration. Education of visitors prior to their arrival on Forest including the issues with noxious weeds is vitally important so visitors are prepared and informed on acceptable uses of public lands. “Tread Lightly” ethics and other important user messages must be communicated with the public in various ways. Print media, electronic media and the Forest’s own web site need to be up to date and current in the information to the public. Additionally Forest Service presence is critical for enforcement on the small percentage of users who will not comply with travel regulations. Although this is a very small percentage estimated at about 10% of the users, this use is very damaging to the resources of the area including soils, riparian, wildlife and vegetation. The ability to implement any of these actions is dependent on funding.
2. Vehicles and heavy equipment that are used for ORV trail maintenance and/or construction, or road/trail decommissioning purposes will be high-pressure washed prior to arrival on the Forest to reduce the spread potential of noxious weeds that could reduce habitat for sensitive plants and animals.
3. The proposed actions will have minimal effects on soils within the analysis area if Wyoming Best Management Practices (BMPs) are applied and monitored (WDEQ 1997). The application of BMPs would be sufficient to minimize additional displacement, compaction, or surface erosion.
4. Close FR 605 in a way that will allow temporary access to motorized vehicles or convert the route to an ATV only trail.
5. Monitor and treat proposed trail system for Canada thistle or other noxious weeds, especially newly constructed trails, and closed area with previous disturbances until native vegetation re-establish. (Re-seed all bare ground within 5 days of disturbance. Obtain weed-free fill material preferably from within the Forest.)
6. If livestock control problems arise as a result of the loss of natural barriers, require new sections of fence to be constructed.
7. Install ATV cattle guards and nearby gates for horses and livestock, where trails bisect fences.
8. All impacts to cultural resources will be reduced to non-significance. Methods to achieve this goal may include re-design of project to avoid heritage resources, plating, barriers, or other approved methods. The Bighorn National Forest has consulted with and will obtain SHPO concurrence prior to final approval of this project.
9. Improve conditions of FR 372 from junction of FR 605 to Cross H Cow Camp, so access is not limited. This may include removing trees to provide adequate roadway width and maintenance to provide sufficient drainage.

## CUMULATIVE EFFECTS

This section supplements and summarizes the cumulative effects discussions that are interspersed throughout the environmental consequences of each resource area. This section collects all the cumulative effects analysis into one portion of the document, in an attempt to better display the cumulative effects analysis to the reader.

Cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions." (40 CFR 1508.7)

The amount of information for the reader to consider and analyze the effects of past actions is extensive. They are largely contained in the Clear Creek/Crazy Woman Creek Landscape Assessment. The majority of the recreation, range, visual quality, Wilderness and heritage resource sections are described in the Landscape Assessment itself. "Watershed Analysis of Forest Fragmentation by Clearcuts and Roads in a Wyoming Forest", Tinker et al., is included in the project record. This analysis quantifies the amount of timber harvest and road building that has occurred on the Bighorn NF, although no direct effects conclusions are made. In conjunction with the Forest Plan Revision process a Forest Wide Roads Analysis was prepared for nine geographic areas including the analysis area. The report is available on the web site at <http://www.fs.fed.us/r2/bighorn/projects/planrevision/geographic/geoassessments/clearcrazy.pdf>

Table 1 lists the ongoing management actions, and Table 2 lists the past, present, and reasonably foreseeable future actions (RFAs), that were considered in the cumulative effects analysis.

**Chart 1. Ongoing Management Actions for the Clear/Crazy Cumulative Effects Analysis**

<b>Project Name</b>	<b>Location/Watershed</b>	<b>Description</b>
Road Maintenance	Roads throughout the Clear Creek and Crazy Woman Creek watersheds.	Road maintenance activities occur annually throughout the area. This work typically includes surface blading and maintenance of drainage structures such as culverts and waterbars. It also includes repair work from storm events. For the most part, these roads were built for timber harvest and recreation access in the 1960's and 1970's. As identified elsewhere in the EA and project record, roads are considered to be a leading cause of sedimentation. The road maintenance will reduce the amount of sedimentation by insuring culverts and waterbars are functioning properly. Other effects are creation of a minor amount of dust during blading, and creation of a short term, small amount of sediment when conducting the drainage maintenance work.
Thinning of 1960's Clearcuts	East Long Park (Caribou Mesa Road); Hesse Creek; Pole Creek. North Fork Crazy Woman Creek watershed.	The areas clearcut in the 1960's have regenerated prolifically, with stocking rates of up to several thousand stems per acre. Average tree heights range from 6 to 20 feet tall. The current density is likely to result in doghair conditions without thinning, and the length of time they will produce wildlife hiding cover will be increased by thinning (Smith and Long, 1987). The June 1995 decision memo included the decision to thin about 2500 acres in these areas. Slash is being lopped and scattered, and small visual leave groups are being left along open roads. Observations of the thinning done to date show that if the thinned areas met the hiding cover definition prior to thinning, they still do; if it was not hiding cover, it still is not. There is a very small percentage of the total area that had just reached the minimum requirements for hiding cover that were temporarily set back to a non-hiding cover condition.
Noxious Weed Management	Forest Wide.	A noxious weed management decision notice was signed in 1998, and the selected action of herbicide application, manual and mechanical treatments, and biological agents on about 800 to 1000 acres will be implemented annually. Biodiversity and minimizing the displacement of native and desired species are two favorable environmental effects. The 26 mitigation measures and 4 monitoring items built into the selected action will minimize the adverse effects. With the increase in recreational use and the activities adjacent to the Forest, invasive weeds will likely increase.
Livestock Grazing	Clear/Crazy Analysis Area	Grazing presently occurs within the analysis area and future grazing will likely continue and have cumulative effects to the soil and aquatic resources under any of the alternatives.
Recreation Use	Clear/Crazy Analysis Area and adjacent property	Recreation is a major land use activity throughout the analysis area, including camping, fishing, hiking, horseback riding, and motorized travel. There are several developed recreation sites within the analysis area. Campgrounds include Middle Fork, Circle Park, South Fork, Crazy Woman, and Lost Cabin. Trailheads include Circle Park and Elgin Park. Other developed recreational destinations include Hospital Hill scenic overlook, Sheep Mountain Lookout, and Pole Creek Cross-country ski area, and Hettinger picnic area. Fishing is a popular activity on many of the large streams in the area due to ease of access. Fishing pressure affects fish populations throughout most of the larger drainages in the entire analysis area. Horseback use and hiking are also popular throughout the area. In the future, recreational use is likely to increase due to an increasing human population and an increased interest in the outdoors. Increases in recreational activities could negatively affect soil and aquatic resource in the analysis area and throughout the Forest in general.

**Chart 2. Summary of Cumulative Effects Analysis for the Clear/Crazy Designated Motorized Trail System**

Bighorn National Forest Cumulative Effects Projects Related to Clear/Crazy Environmental Assessment			
<i>*Definition of cumulative impact: "The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7</i>			
<b>Other available sources:</b> Geographic (watershed) and forest wide assessments, white papers on Old-growth, fragmentation, Draft of HRV and Region2 species conservation project terrestrial and aquatic assessments, TNC landscape assessments and species assessments, Powder River and Clear/Crazy Landscape Assessments			
Past Projects			
Project Name	Location	Status of NEPA	Project Summary
Little Goose/Park Reservoir Travel Management	60,000 acres in NW Johnson County/SE Sheridan County near Park Reservoir	Decision Notice signed on 3/12/1997	Motorized travel restricted to authorized roads and trails. Approximately 12 miles of nonmotorized trails and 12 miles of motorized trails will be added to the system. Seasonal restriction implemented on Story/Penrose trail from March 15 to June 15 of each year. Improve water quality by prohibiting cross country motorized travel.
Present/Concurrent Projects			
Project Name	Location	Status of NEPA	Project Summary
Pole Creek Gravel Pit Expansion	NE 1/4 SE 1/4 Section 26, T49N R84W. Pole Creek watershed.	Decision notice signed on 3/29/99.	Wyoming Highway Department plans to expand the existing Pole Creek gravel pit permitted area by 12 acres. Project is to mine and crush gravel. Mining and crushing of 450,000 cubic yards of material is planned in conjunction with US 16 reconstruction
Reasonably Foreseeable Future Projects (Scoping Completed)			
Project Name	Location	Status of NEPA	Project Summary
Woodrock Project	Tongue RD - East of US Hwy 14 between Owen Creek CG and Granite Pass, T54N, R88W	Decision anticipated in March 2004	Proposes to improve watershed conditions by relocating or closing existing roads where problems cannot be mitigated, restrict motorized travel to designated routes, improve drainage and vegetative cover on roads and trails, mitigate dispersed campsite impacts, treat forests to improve structure, re-establish historic scale openings and forest genetic vigor.
Continued development of private lands adjacent to Analysis Area.	Private lands south and east in the Billy and Poison Creek areas, Dullknife Reservoir area	N/A	Continued subdivision, sales and construction of private cabins on lands adjacent to project area. Estimated 150 plus cabins are on the private lands adjacent to the Analysis Area.

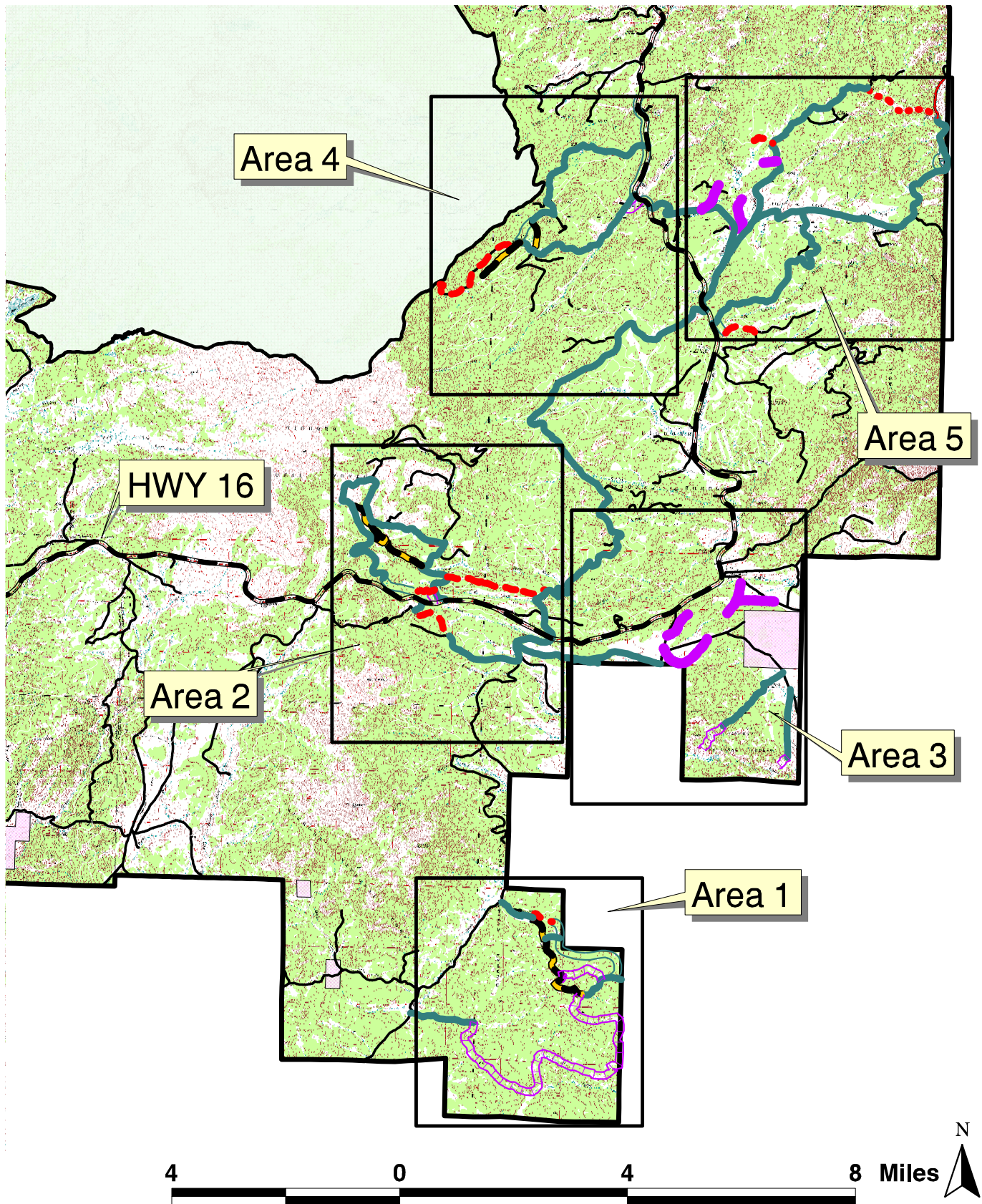
## Chapter 4

Chapter 4  
List of Preparers

NAME	POSITION AND RESPONSIBILITY	EDUCATION AND EXPERIENCE
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<b>Consultation with Others</b>		
Wyoming Game and Fish Department		
Wyoming State Historical Preservation Office		
Wyoming State Trails		

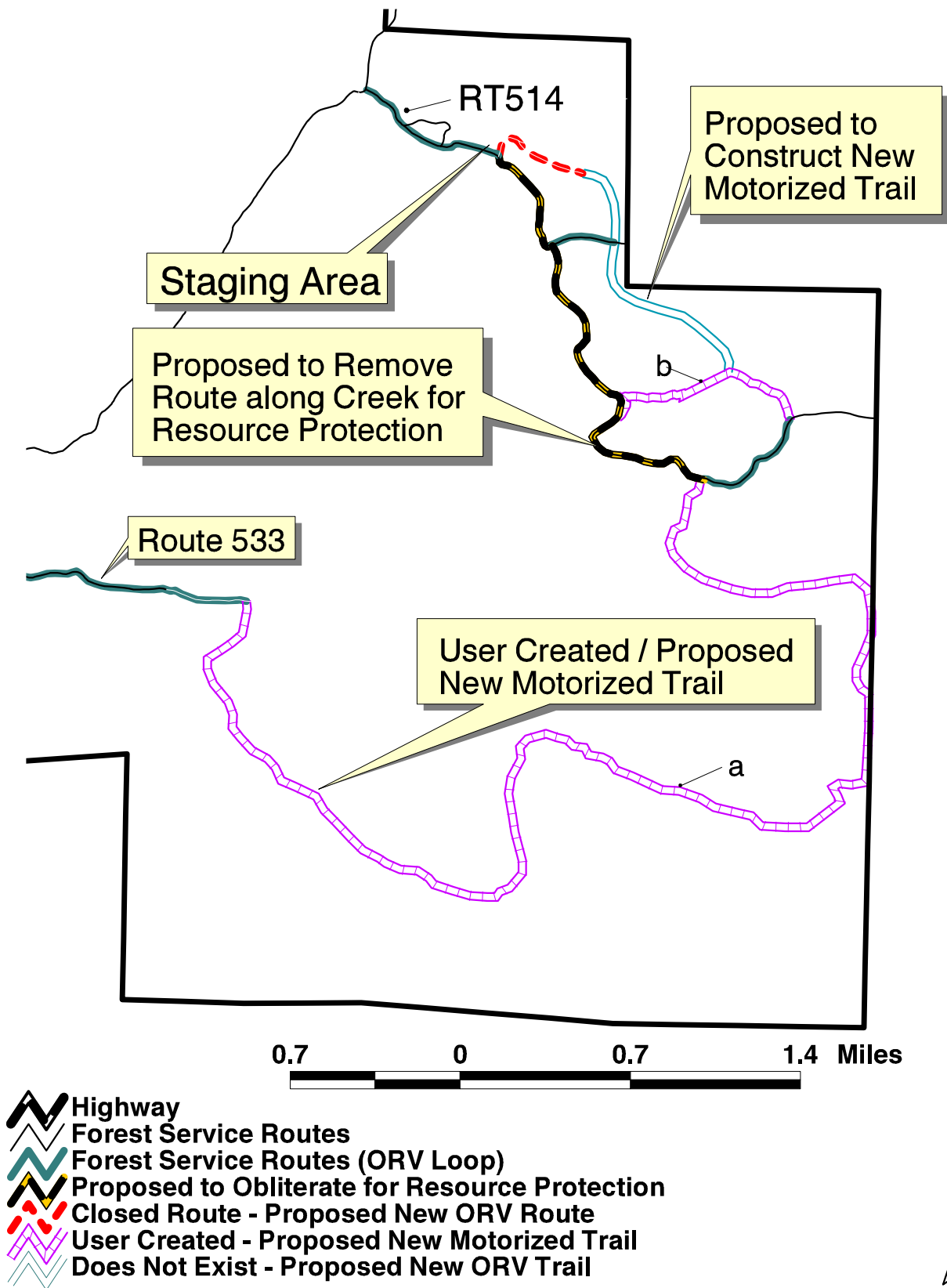
## Appendix A

# Area Locations

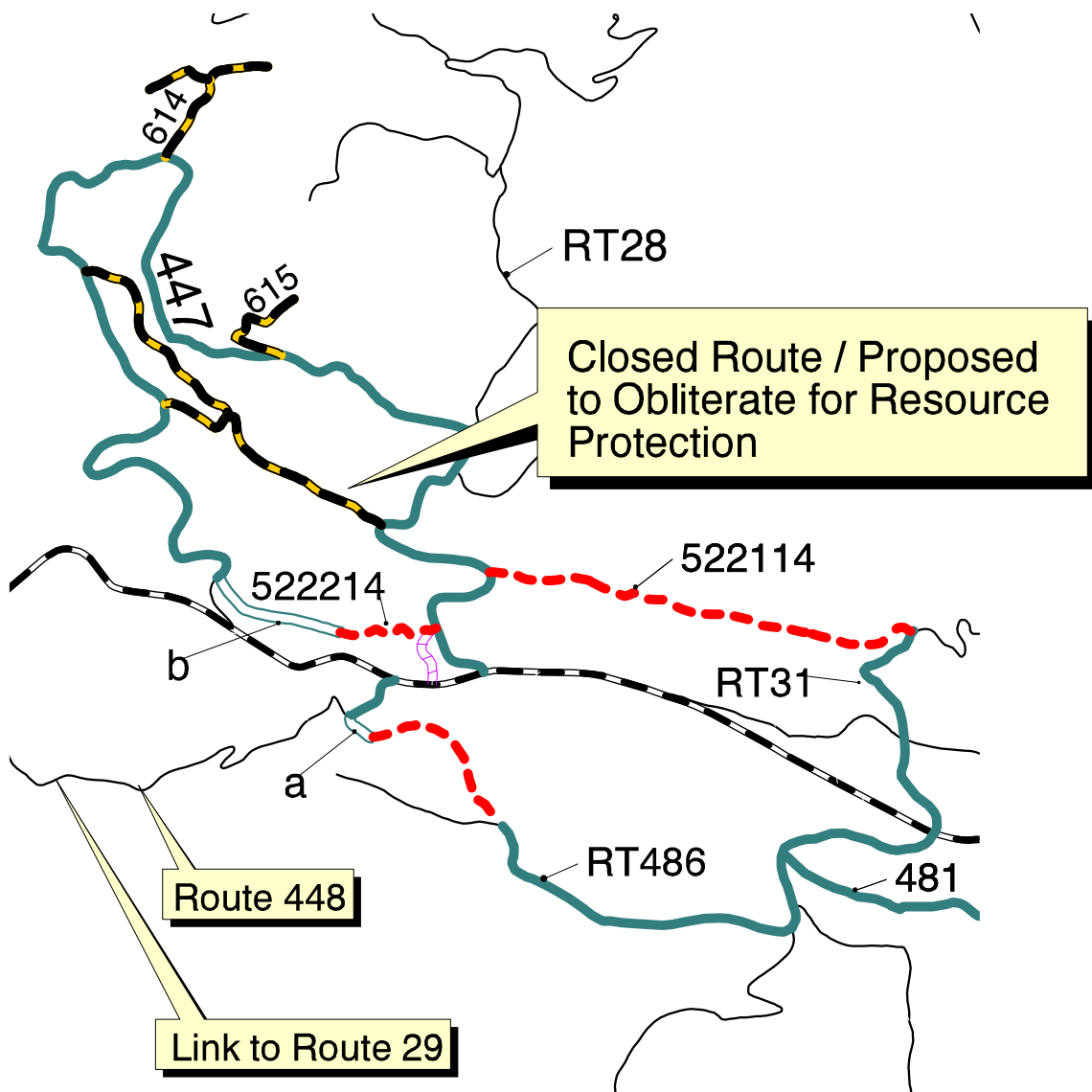









## **Alternative 2**

# Area1 Alternative2



# Area2 Alternative2

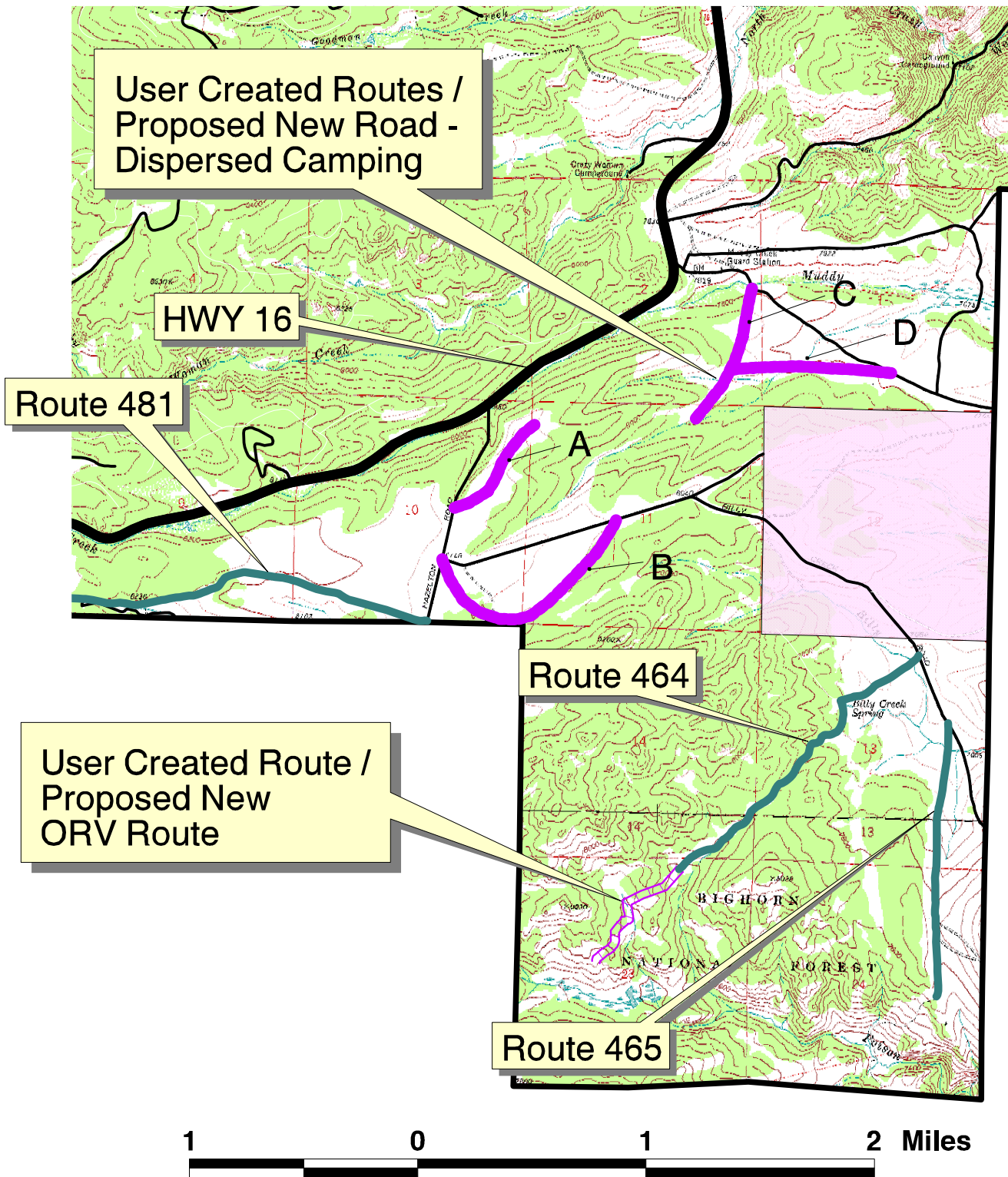


-  Highway
-  Forest Service Route
-  Forest Service Route (ORV Loop)
-  Proposed to Obliterated for Resource Protection
-  Closed Route - Proposed New ORV Route
-  User Created - Proposed New Motorized Trail
-  Does Not Exist - Proposed New ORV Trail



# Area 3

Alternative 2

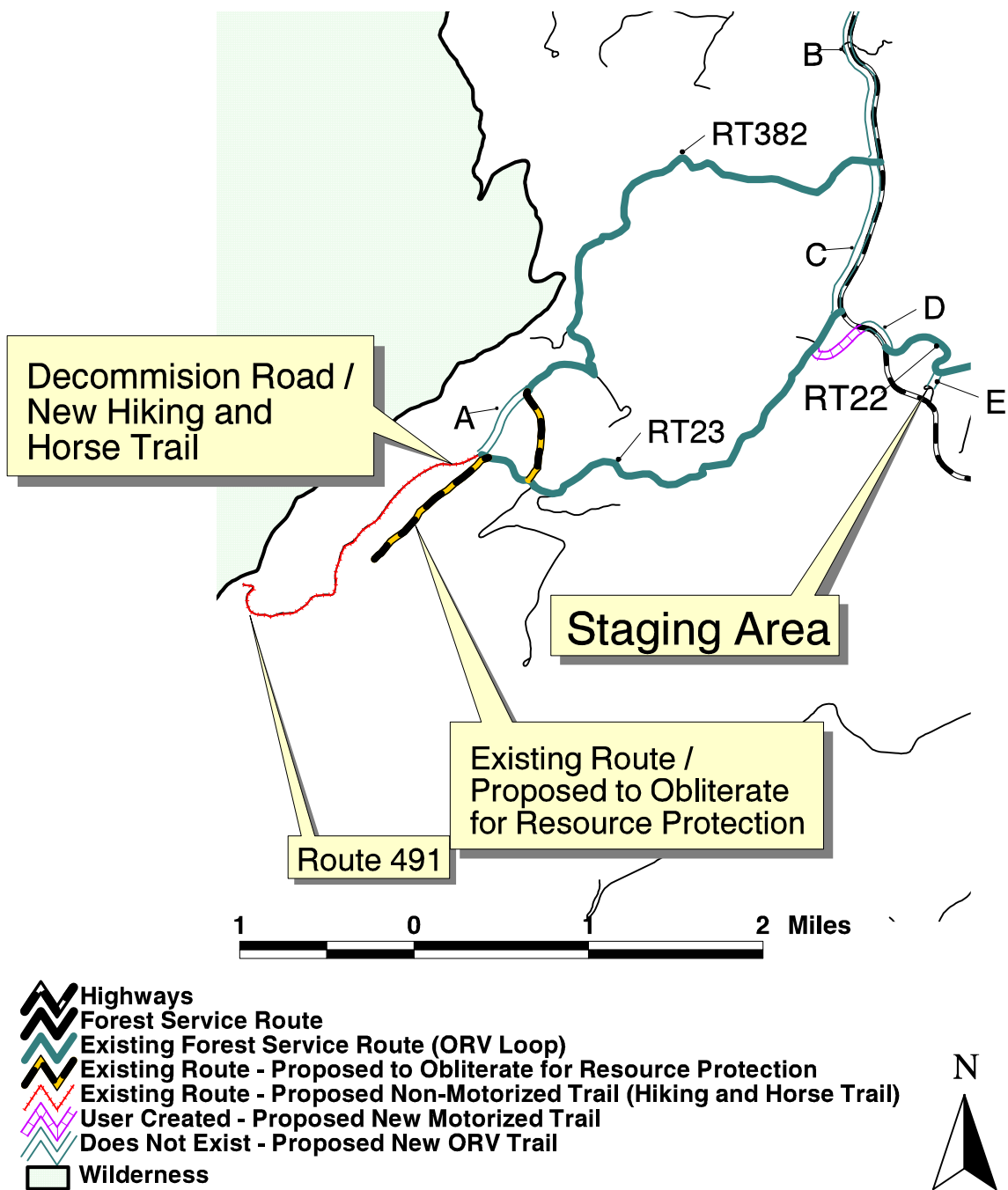


-  Highways
-  Forest Service Routes
-  Forest Service Route (ORV Loop)
-  User Created Route - Proposed New Route for Dispersed Camping
-  User Created Route - Proposed New Motorized Trail
-  State Property

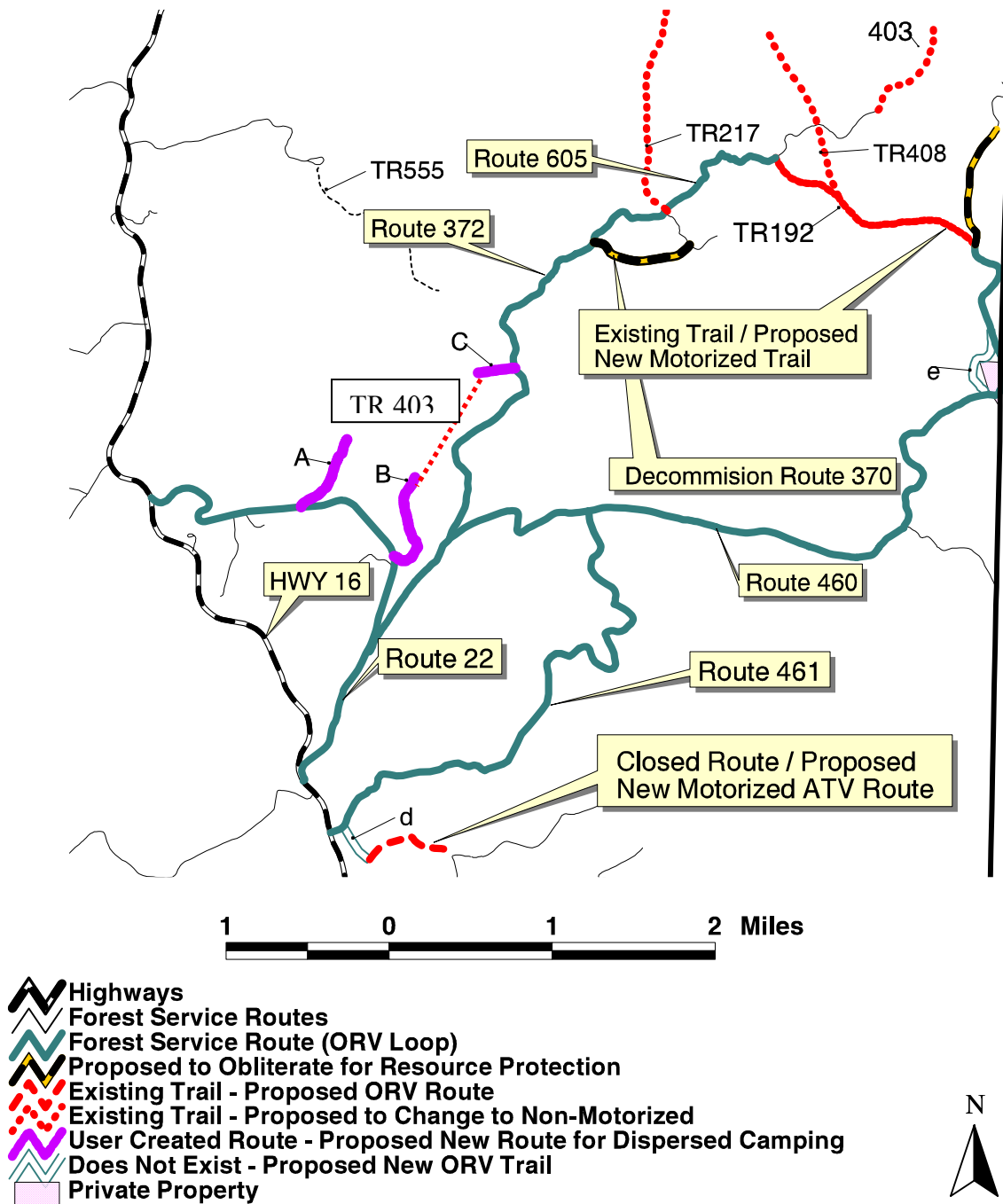


Area4

Alternative 2

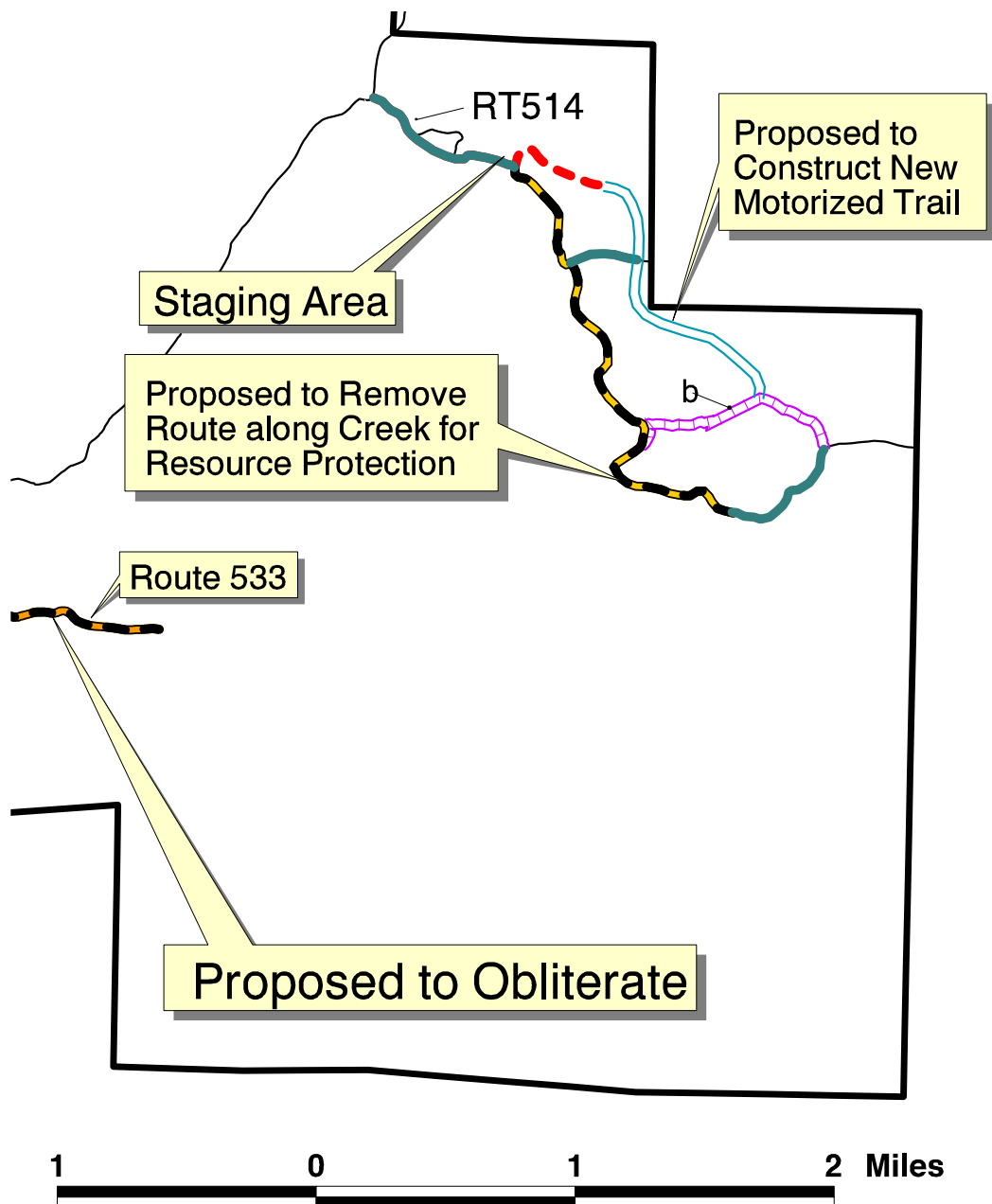


# Area5\_Alternative2



## **Alternative 3**

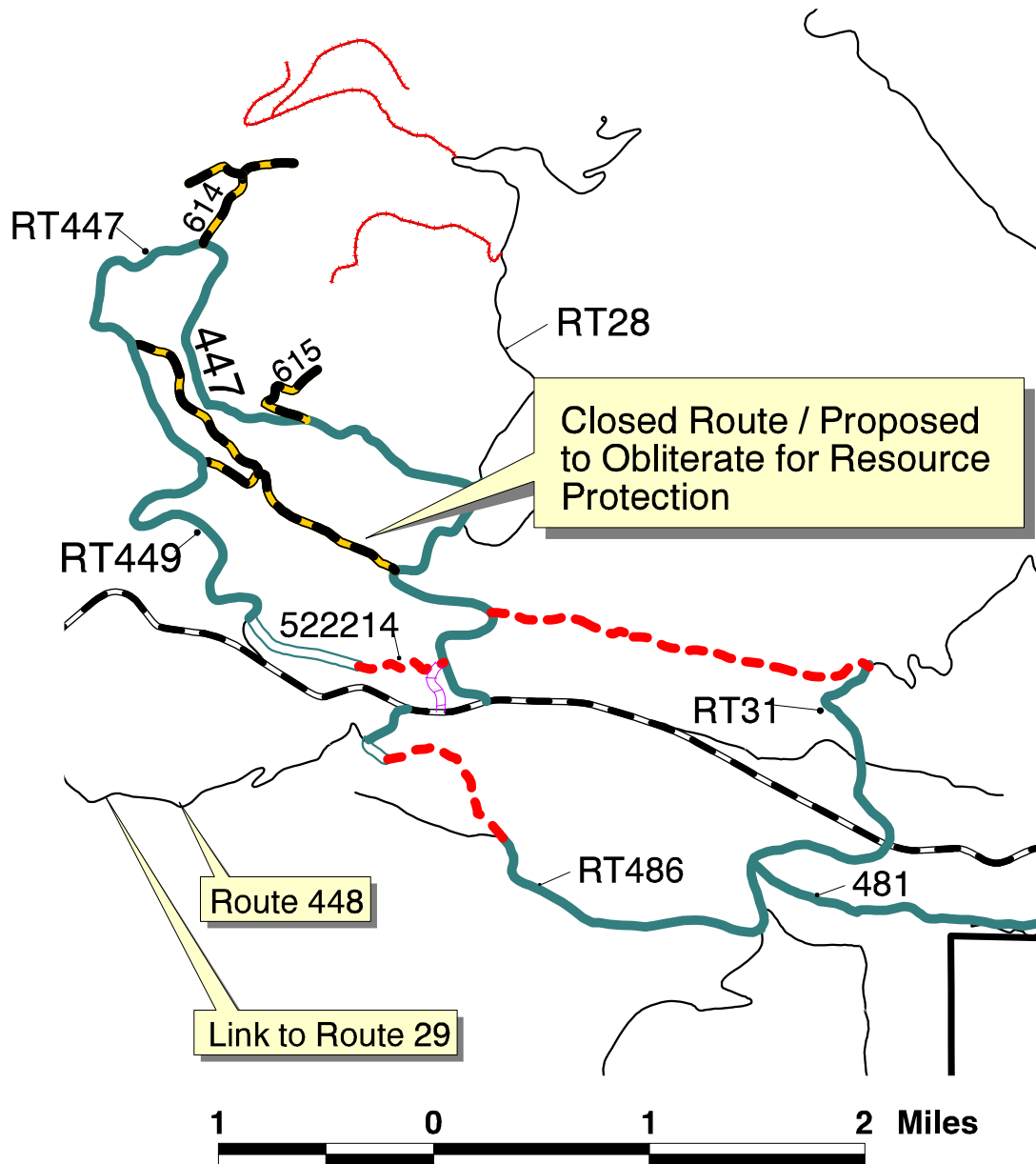
# Area1 Alternative3











- Highway
- Forest Service Routes
- Forest Service Routes (ORV Loop)
- Proposed to Obliterate for Resource Protection
- Closed Route - Proposed New ORV Route
- User Created - Proposed New Motorized Trail
- Does Not Exist - Proposed New ORV Trail



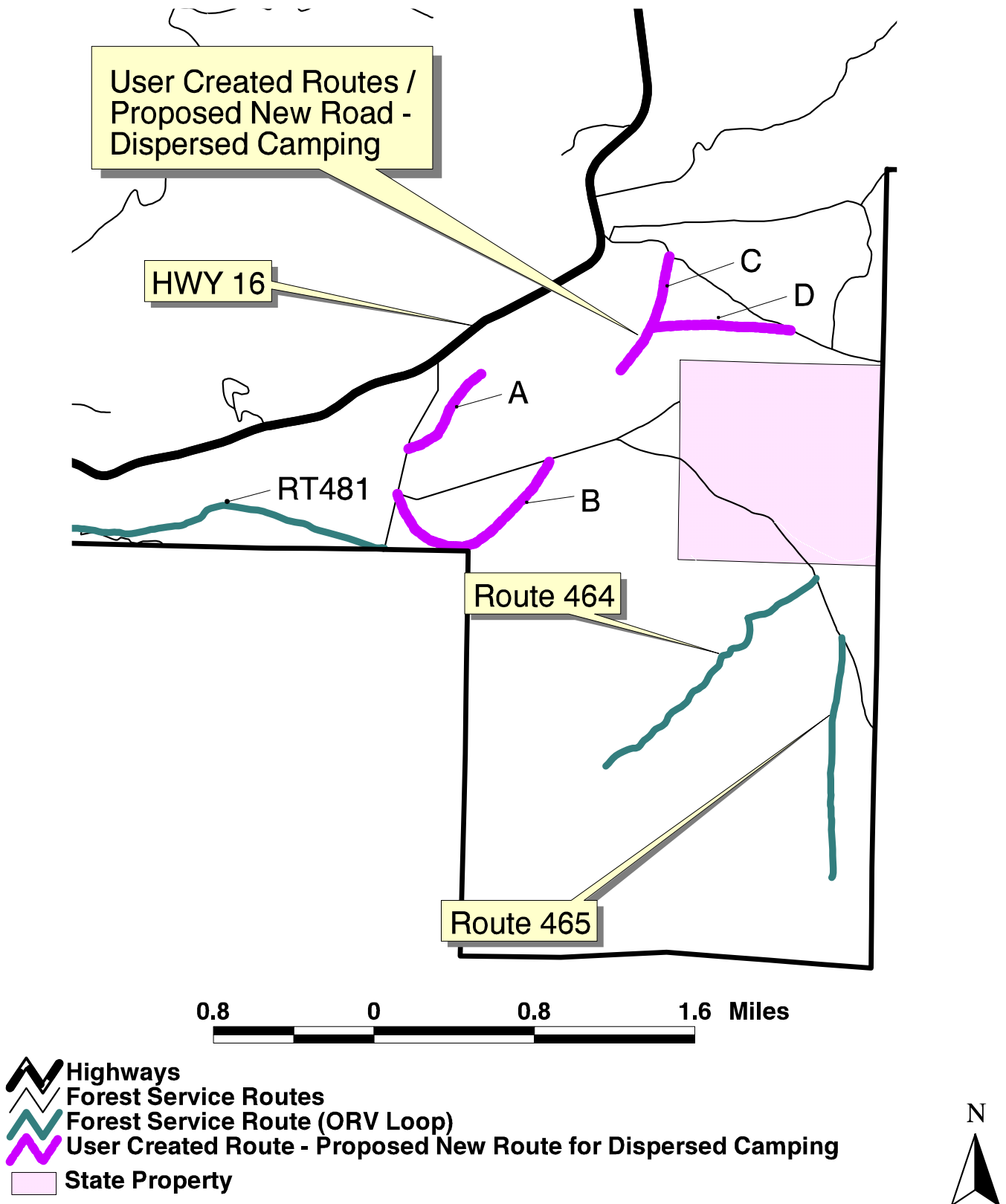
## Area2 Alternative3



-  Highway
-  Forest Service Route
-  Forest Service Route (ORV Loop)
-  Proposed to Obliterated for Resource Protection
-  Closed Route - Proposed New ORV Route
-  Open Route - Proposed New Closed Route
-  User Created - Proposed New Motorized Trail
-  Does Not Exist - Proposed New ORV Trail

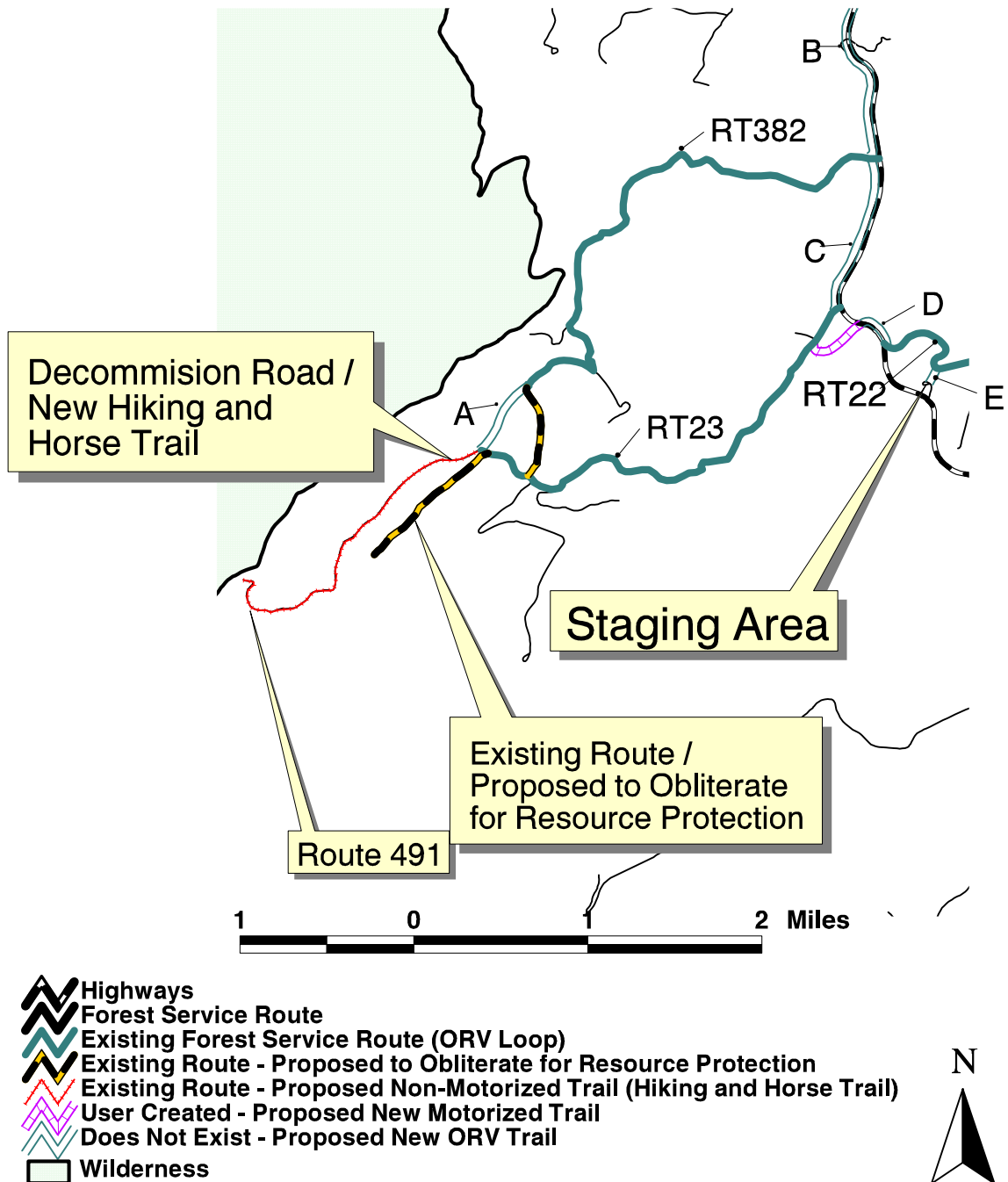


# Area3 Alternative3



## Area4

## Alternative 3



# Area5 Alternative3

